

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY Poland

REPORT

SUBJECT 1. Zabrze District Gasworks in Poland
2. Enterprises in the Zabrze District:
Installations, Equipment, and Production

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Enclosed are pages 1 through 15, and 54 through 56/ as received 11/1/80. This portion of the 146-page document includes a detailed index, information on the organization of the Main Office of the Zabrze District Gasworks (ZGOZ), and comments. A complete copy of the document, with specific details on individual enterprises in the Zabrze District, is being furnished to the FBI.

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INFORMATION REPORT INFORMATION REPORT

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REPORT

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2

THE ZABRZE DISTRICT GASWORKS IN POLAND (C)**Table of Contents**

	<u>Page Nr</u>
Introduction	5
1. <u>The Zabrze District Gasworks in Poland</u>	7
a. Location and Description of the Main Office of the Zabrze District Gasworks	7
b. Mission	7
c. Organization of the Main Office of ZGOZ in ZABRZE.	7
(1) Office of the Director.	7
(a) Personnel Branch	8
(b) Main Bookkeeping Branch.	8
(c) Planning Branch	8
(d) Employment Branch.	9
(e) Legal Advisors Section	9
(f) Factory Council.	9
(2) Office of the First Deputy Director-Chief Engineer.	9
(a) Production Branch.	9
(b) Chief Mechanics Branch	10
(c) Fire Prevention Branch	10
(d) Accident Prevention Branch	10
(e) General Technical Branch	10
(f) Designing Branch	11
(3) Office of the Second Deputy Director for Administrative Affairs	11
(a) Administrative Branch.	11
(b) Supply Branch.	11
(c) Transportation Branch.	12
(d) Collections Branch	12
(e) Social Branch.	12
(4) Office of the Third Deputy Director for Investments.	12
(a) Technical Documentation Branch.	12
(b) Legal Branch	13
(c) Technical Inspection Branch.	13
(d) Bill Reckoning Branch	13
d. Zabrze District Raw Coal Gas Network and Installations	14
(1) Background.	14
(2) Gas Producing Installations	14
(a) Zabrze Coke Plant	15
(b) Makoszowy Coke Plant	15
(c) Jadwiga Coke Plant	15
(d) Bobrek Steel Works	16

CONFIDENTIAL

50X1-HUM

CONFIDENTIAL

3
Table of Contents
(Continued)

	<u>Page Nr</u>
(e) Gliwice Coke Plant	16
(f) Walenty Coke Plant	16
(g) Kosciuszko Steel Works	17
(h) Knurów Coke Plant	18
(i) Debiensko Coke Plant	18
(j) Emma Coke Plant	19
(k) Zdzieszowice Coke Plant	19
(l) Lenin Steel Works	19
(m) Bierut Steel Works	19
(n) Pokoj Steel Works	20
(o) Florian Steel Works	20
(p) Zygmunt Steel Works	20
(q) Orzegów Coke Plant	20
 (3) Compressor Stations	 21
(a) Zaborze Compressor Station	21
(b) Walenty Compressor Station	22
(c) Makoszyów Compressor Station	22
(d) Gliwice Compressor Station	22
(e) Bobrek Compressor Station	23
(f) Jadwiga Compressor Station	23
(g) Kosciuszko Compressor Station	23
(h) Debiensko Compressor Station	23
 (4) Raw Coal Gas Consumers	 24
(a) Pokoj Steel Works	24
(b) Zgoda Steel Works	24
(c) Florian Steel Works	24
(d) Mikolaj Thermoelectric Station	25
(e) Batory Steel Works	25
(f) Konstal Coach Factory	25
(g) Chorzów Thermoelectric Station	25
(h) Pstrowski Thermoelectric Station	25
(i) Concordia Coke Plant	26
(j) CDS Central Distillation of Coal Tar Plant	26
(k) Zabrze Steel Works	26
(l) Zabrze Glass and Glass Wool Works	26
(m) Zabrze Thermoelectric Station	26
(n) Gliwice Thermoelectric Station	27
(o) Knurów Thermoelectric Plant	27
(p) Debiensko Thermoelectric Plant	27
(q) Marcel Thermoelectric Plant	27
(r) Lenin Thermoelectric Plant	27
(s) Zdzieszowice Thermoelectric Station	27
 (5) Raw Coal Gas Pipelines of the Zabrze District	 27
(6) Blast Furnace Gas Pipelines	33
 e. Zabrze District Purified Coal Gas Pipeline System	 33
(1) Background	33
(2) Compressor and Purifying Stations	34
(a) Zabrze I Compressor and Purifying Station	34
(b) Zabrze II Compressor and Purifying Station	34

CONFIDENTIAL

C-O-N-F-I-E-E-N-T-I-A-L

4

Table of Contents
(Continued)

50X1-HUM

	<u>Page Nr</u>
(c) Zdzeszowice Compressor and Purifying Station.....	34
(d) Radlin Compressor and Purifying Station.....	35
(e) Knurów Compressor and Purifying Station.....	35
(f) Carbochemia Compressor and Purifying Station.....	35
(g) Krakow Compressor and Purifying Station.....	36
(h) Czeszochowa Compressor and Purifying Station.....	36
(3) Purified Coal Gas Pipelines and Installations of the Zabrze District.....	36
(4) Natural Gas Pipelines of the Zabrze District.....	50
(5) Planned Purified Coal Gas Pipelines of the Zabrze District..	51
(6) Pipelines Under Construction in the Zabrze District.....	52
(7) Critical Points of the Zabrze Gas Pipeline Network.....	53
(a) Destruction of Coke Plants and Steel Works.....	54
(b) Destruction of the Nerve Center of the Zabrze Gas Pipeline Network.....	54
COMMENTS.....	54
Annexes A through E.....	57-146
A, A-1	Physical Lay-out Sketches of Main Office of ZGOZ in Zabrze, Poland; with legends
B	Organizational Chart of ZGOZ (names of positions only; no persons)
C	Maps Showing Gas Pipelines in the Zabrze District (C-1, C-3, C-5, C-9, C-21, C-22, C-28, C-29, C-30)
Physical Layout Sketches of the Following Enterprises, with legends:	
C-2	Zaborze Coke Plant
C-4	Makoszowy Coke Plant
C-6	Jadwiga Coke Plant
C-7	Bobrek Steel Works
C-8	Gliwice (Gleiwitz) Coke Plant; Carbochemia Compressor Station
C-10	Walenty Coke Plant
C-11	Kosciuszko Steel Works
C-12	Knurów Coke Plant
C-13	Debiensko Coke Plant
C-14	Emma Coke Plant
C-15	Zdzeszowice Coke Plant
C-16	Lenin Steel Works
C-17	Bierut Steel Works
C-18	Pokoj Steel Works
C-19	Florian Steel Works
C-20	Batory Steel Works
C-23	Zabrze I Compressor and Purifying Station
C-24	Zabrze II Compressor and Purifying Station
C-25	Switochowice Compressor and Distributing Station
C-27	Szopienice Compressor and Distributing Station
C-31	Jednosc Steel Works, Siemianowicach
D, D-II	Map: Purified Coal Gas Pipelines and Natural Gas Pipelines in the Zabrze District
E	Organizational Chart of Agencies Subordinate to the Zabrze District Gasworks

C-O-N-F-I-D-E-N-T-I-A-L

50X1-HUM

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5

THE ZABRZE DISTRICT GASWORKS IN POLAND (C)**Introduction**

This report contains [] information on the Zabrze District Gasworks in Poland, which transported three types of gas in its pipelines: raw coal gas, purified coal gas, and natural gas. [] technical information regarding these three types of pipelines, their locations, the consumers they served, gas producers and processing installations, and the organization of the Zabrze District Gasworks []

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Although an integral part of the over-all pipeline system subordinate to the Zabrze District Gasworks, the raw coal gas pipelines around ZABRZE formed a separate pipeline system, which included producers of raw coal gas, the pipelines, processors, and consumers. To more clearly depict the pattern of raw coal gas pipelines, they are shown separately in Annex C, an overlay taken from maps with a scale of 1:100,000. It should be kept in mind, however, that this system was linked with the purified gas pipeline system and was not a separate network.

The purified coal gas pipeline system in the Zabrze district was a separate system, which is shown together with consumers and processors of purified coal gas in parts 1 and 2 of Annex D. Part 1 of Annex D also includes information on the transportation of natural gas.

For a more detailed portrayal of the complex layout of the pipeline systems, subannexes with a scale of 1:25,000 and [] sketches of installation layouts, where known, are included. The subannexes support Annex C by showing raw coal gas pipelines, but they also include details on purified gas pipelines. In certain instances, installations were outside the area of pipeline concentration represented in Annex C; they are, therefore, not shown on the 1:25,000 sketches.

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Because of the three varieties of pipelines and their representation on overlays of different scales, various systems of identification of producers, processors, and consumers were used. In Annex C letters were used to show producers, and numbers to show processors and consumers of raw coal gas. In Annex D, parts 1 and 2, letters represent compressor and purifying stations, and numbers represent consumers and processors of purified coal gas. In addition, Part 1 of Annex D shows natural gas consumers and dispensing stations.

Items of interest shown on Part 2 of Annex D are not represented on the 1:25,000 subannexes to Annex C. The items shown in Annex C which again appear on the 1:25,000 subannexes are in most cases represented by a Roman numeral, in order to call attention to items concerned only with raw coal gas processing or consumption. Legends accompany annexes to identify items of interest.

[] regarding steel works mentioned in this report. [] The expression m³/h used throughout this report is to be read as cubic meters per hour.

50X1-HUM

The coordinates used for installations in the area of concentration are taken from map sheets with a scale of 1:25,000.

<u>Location</u>	<u>Geographic</u>	<u>UTM</u>
BEDZIN (BENDSBURG)	N50-19, E19-08	CA 675765
BLACHOWNIA (BLECHHAMMER)	N50-22, E18-17	CA 0882
BOBREK (BOBREK-KARF)	N50-19, E18-54	CA 485788

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6



<u>Location</u>	<u>Geographic</u>	<u>UTM</u>
BYTOM	N50-21, E18-55	CA 5279
CHORZOW	N50-19, E18-59	CA 5675
CZELADZ	N50-19, E19-06	CA 6476
DABROWA GORNICZA	N50-20, E19-12	CA 7176
DEBIENSKO	N50-09, E18-41	CA 3460
HAJDUKI BATORY	N50-16, E18-57	CA 5570
HAJDUKI WIELKIE	N50-16, E18-57	CA 515720
KEDZIERZYN (HEIDEBRECK)	N50-21, E18-12	CA 015810
KNUROW	N50-13, E18-41	CA 3566
KOZLE (COSEL)	N50-20, E18-10	BA 9780
KRYWALD	N50-12, E18-39	CA 3265
LABEDY (LABAND)	N50-20, E18-37	CA 3180
LAGIEWNIKI	N50-18, E18-55	CA 5176
MAKOSZOWY (MAKOSCHAU)	N50-15, E18-46	CA 403705
MIKOLOW	N50-10, E18-54	CA 5060
MILOWICE	N50-18, E19-08	CA 6673
MYSLOWICE	N50-14, E19-08	CA 6767
NOWY BYTOM	N50-17, E18-54	CA 4973
ORZEGOW	N50-18, E18-53	CA 4977
PARUSZOWIEC	N50-05, E18-33	CA 2654
PIOTRKOW	N50-23, E19-42	DB 0995
PROSZOWICE	N50-12, E20-18	DA 4860
PSZCZYNA	N49-58, E18-57	CA 5538
RACIBORZ	N50-06, E18-13	CA 0253
RADLIN	N50-01, E18-32	CA 2444
RUHA-SLASKA	N50-17, E18-51	CA 4872
RUDNIKI	N50-53, E19-16	CB 7739
RYBNIK	N50-05, E18-33	CA 2442
RYSKOWICE	N50-23, E18-39	CA 3286

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7

<u>Location</u>	<u>Geographic</u>	<u>UTM</u>
SIEMIANOWICE SLASKIE	N50-17, E19-02	CA 6074
SOSNOWIEC	N50-19, E19-08	CA 6774
SWIETOCHLOWICE	N50-17, E18-57	CA 5273
SZCZAKOWA	N50-14, E19-18	CA 7967
SZOPIENICE	N50-17, E19-07	CA 6470
TARNOWSKIE GORY	N50-27, E18-51	CA 4991
TYCHY	N50-07, E18-59	CA 5655
ZABKOWICE	N50-23, E19-16	CA 7881
ZABRZE-MACIEJOW	N50-18, E18-37	CA 2976
ZDZIESZOWICE	N50-25, E18-07	BB 9589

1. The Zabrze District Gasworks in Poland

a. Location and Description of the Main Office of the Zabrze District Gasworks. (For pinpoint location and floor plan of the main office of ZGOZ, see Annexes A and A-1, Figures 1 through 4.)

The main office of ZGOZ consisted of two red brick buildings with brown trimmings. The main entrance to ZGOZ was at ulica Wolnosci 311. This was a dual 4- and 3- story building, 14 meters high from the sidewalk to the edge of the roof, 16 meters wide across the front, and about 40 meters from the front of the building to the rear. The back of the building joined the back of a dual 3- and 2- story building that was facing ulica Dworcowa. A doorway had been broken through the ends of these two buildings on the second floor allowing passage from one building to the other. The two buildings contained most of the administrative branches of the Zabrze District Gasworks. The remaining administrative branches were at ulica Stalmacha 7 in ZABRZE, and are identified by asterisks in Annex B.

b. Mission

The mission of ZGOZ was to receive raw coal gas from coke plants and steel works and to distribute part of it among consumers of that type of gas, and to purify the remainder and distribute it among purified coal gas consumers. In addition, it also received a small quantity of natural gas from the Tarnow District Gasworks. (Zakłady Gazownictwa Okregu Tarnowskiego - ZGOT) and distributed it among natural gas consumers, and gas filling stations.

The Zabrze District Gasworks was also responsible for the operation, maintenance, repair, and conservation of all equipment and installations subordinate to it.

c. Organization of the Main Office of ZGOZ in ZABRZE (See Annex B)

(1) Office of the Director

The director of ZGOZ was Alojzy GOCYLA. He was responsible for the entire ZGOZ and had to answer only to the director of the Association of the Gas Industry (Zjednoczenie Przemyslu Gazowniczego - ZPG). He had one private

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50X1-HUM

CONFIDENTIAL

8

secretary.

The following branch offices were directly subordinate to the office of the director.

(a) Personnel Branch (Dzial Personalny)

Two people, (mu), worked in this branch, the branch chief, and an investigator who checked the backgrounds of prospective employees.

The branch was responsible for keeping the personnel records of all employees of ZGOZ, and for investigating prospective employees. For example, if a man wanted to work in ZGOZ, his background was first checked to find out where he had worked before, if he was a good worker, if he drank heavily, if he was a troublemaker, and if he was a Communist Party member. The branch also kept a card file on each employee showing the length of service in ZGOZ and whether or not the employee was a Party member.

(b) Main Bookkeeping Branch (Dzial Glownego Ksiegowego)

There were about 30 people working in this branch, the chief and 29 bookkeepers (mu).

The branch was responsible for keeping the financial records of ZGOZ. For example, the sale and purchase of gas, major repairs, minor repairs, investment in new construction work, and the ZGOZ payroll were each kept under a separate account. The branch had to keep a record of how much money was coming into and going out of each account.

The branch was also responsible for keeping the records for the depreciation fund. Each piece of equipment was given a certain number of years of life expectancy, and, in order to be able to replace a piece of equipment when it wore out, funds had to be available to purchase a replacement. To insure this, the number of years a piece of equipment was supposed to last was divided into its total cost and the amount of money was sent to the bank every year. In this way the money to buy a new piece of equipment was on hand when the old one reached its life expectancy. The branch was on the second and third floors of the building at ulica Wolnosci 311.

50X1-HUM

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(c) Planning Branch (Dzial Planowania)

Four people worked in this branch (mu), the chief and three planners.

The branch was responsible for making plans for one year in advance on the needs for gas, and what the cost would be to ZGOZ and the consumer. The figures on the future needs of gas were obtained by making surveys of all consumers of gas in the Zabrze District and finding out how much gas each would require in the future.

The branch was also responsible for making plans for future construction work. It had to plan what type construction work was needed and what it would cost ZGOZ. These plans were also estimated for one year in advance.

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9

(d) Employment Branch (Dzial Zatrudnienia)

There were six people working in this branch (nu); two checked work norms, three made out payrolls and one was the chief.

The branch, which was at ulica Stalmacha 7, was responsible for acquiring new workers for ZGOZ, for keeping a record of the number of people employed in ZGOZ, for keeping a record of how much of the monthly work norms were fulfilled, and for making out the payrolls for ZGOZ. This branch also kept a manning table tabulation of positions and workers filling them.

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(e) Legal Advisors Section (Radca Prawny)

There was only one person (nu) working in this branch, a lawyer who handled legal problems for the ZGOZ, such as a small consumer not paying for the gas he received, or a pipeline having to be laid through a collective farm, or a coke plant producing coal gas of a substandard quality.

this man was a qualified lawyer, capable of making his own decisions on any legal matter. However, the lawyer in the State Gas Inspection Department (Panstwowa Inspekcja Gazownicza - PIQ), had the last say on legal matters.

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(f) Factory Council (Rada Zakladowa)

There were three people working in this branch: the chief, one secretary, and one advisor (nu).

The branch was responsible for seeing that workers received their correct pay, vacations, pensions, and overtime pay.

if a man had to work overtime, he was supposed to receive 50 percent more pay for the first two hours' overtime, 100 percent more pay for the second two hours' overtime, and 100 percent more for the whole overtime period if he worked six or more hours' overtime.

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**(2) Office of the First Deputy Director-Chief Engineer
(I Zastepca Dyrektora Naczelnego-Inzynier)**

The first deputy director was Engineer GALICKI. He was directly subordinate to the director of ZGOZ and was in charge when the director was absent. GALICKI was responsible for all branches subordinate to his office and for all technical matters in ZGOZ. He had one private secretary who worked with him.

The following branch offices were directly subordinate to the office of the first deputy director:

(a) Production Branch (Dzial Produkcji)

Ten persons worked in this branch, the chief of the branch, (nu), four planimeter operators, three persons who checked the quality of the gas, and two who took care of branch administrative matters.

The branch was responsible for keeping a check on the quality and quantity of coal gas that ZGOZ was receiving from the coke plants, and the quantity of coal gas larger consumers were receiving from ZGOZ. It also had to coordinate with the coke plants from which it received gas to find out how much gas ZGOZ would receive for 30 days, three months, and a year in advance. The figures for 30 days in advance were used to make a chart showing how much gas large consumers

CONFIDENTIAL

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CONFIDENTIAL

10

could expect to receive per hour for 30 days in advance. This was not a fixed figure, however; and could be expected to fluctuate. Whenever a coke plant wanted to reduce the amount of gas it was sending to ZGOZ, because of repairs or some other reason, it had to notify the chief of the production branch ahead of time. If this reduction in gas would present a serious problem, the chief of the production branch would notify the director of ZGOZ, who would in turn notify the director of ZPG. A meeting would then be called between representatives of ZPG, ZGOZ, the Central Administration of the Metallurgical Industry (Centralny Zarzad Przemyslu Hutniczego - CZPH), and the coke plant to try to resolve the situation. [redacted]

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(b) Chief Mechanics Branch (Dzial Glownego Mechanika)

There were 12 employees in this branch; three electrical engineers, six mechanical engineers for major repairs, two mechanical engineers inspectors, and the branch chief (nu).

The branch was responsible for all machines subordinate to ZGOZ. It was also responsible for the planning of all construction work. [redacted] its employees spent most of their time giving advice and making inspections. The branch was at ulica Stalmacha 1. [redacted]

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(c) Fire Prevention Branch (Dzial Ochrony Przeciwpozarowej)

One man worked in this branch. He was responsible for enforcing fire regulations and for organizing a 20-to 25-man emergency fire-fighting crew from among the employees of ZGOZ. He trained the crew one hour every week. [redacted]

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(d) Accident Prevention Branch (Dzial Bezpieczenstwa Pracy)

There were two people working in the branch (nu), and they were responsible for enforcing safety regulations in ZGOZ. The safety regulations themselves were made by the Ministry of Health (Ministerstwo Zdrowia) and the Ministry of Labor (Ministerstwo Pracy). The branch established the procedures required to implement the regulations.

The following were some of the safety regulations: All welders had to use goggles while welding, all women working on machines had to have their hair tied back, persons working on machines had to either roll up their sleeves or tie their cuffs so they would not hang loose, no objects could be thrown in the workshops, areas where welding was going on had to be screened off to keep people from looking at the flame, areas where cranes were working had to be fenced off to prevent cranes from lifting loads over workers, and no horseplay was allowed in any place at any time. [redacted]

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(e) General Technical Branch (Dzial Ogolno Techniczny)

There were 10 people in the branch (nu); one chief and 9 draftsmen.

The branch was responsible for keeping one copy of all blueprints for minor construction work, and for making over old blueprints before they became illegible.

The branch was also responsible for having the pipelines checked at various intervals to determine their condition. [redacted]

50X1-HUM

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50X1-HUM

11

all pipelines laid through swamps were checked every 5 years and all pipelines laid through dry areas were checked every 10 years. The reason pipelines in swamps were checked more frequently was because the preservative on them wore off more quickly. The branch was at ulica Stalmacha 7. [redacted]

(f) Designing Branch (Dzial Konstrukcyjny)

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and four designers (mu).

Five people worked in this branch, a chief

The branch was a research branch responsible for designing improvements for the gas pipeline system in the Zabrze District. For example, if a certain type of gasket was not working properly, the branch had to design a better one. [redacted]

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(3) Office of the Second Deputy Director for Administrative Affairs (II Zastepca-Dyrektor Administracyjny)

The second deputy director was PELIK, (fmu). He was responsible for all branches subordinate to his office and for all administrative matters in ZGOZ. He was directly subordinate to the Director of ZGOZ, and he had a private secretary.

The following branch offices were directly subordinate to the office of the second deputy directors:

(a) Administrative Branch (Dzial Administracyjny)

Fourteen persons worked in this branch (mu); the chief, his secretary, five typists, three persons who took care of office supplies and the maintenance of the building, three persons who handled all incoming and outgoing correspondence, and one messenger girl.

The branch chief and his secretary were the only ones who could receive classified correspondence, but they were not allowed to open it. All classified correspondence had to be delivered to the director of ZGOZ by the chief of the administrative branch. If the director was not present, it had to be delivered to the first deputy director, or, if both were absent, to the second deputy director. [redacted] classified correspondence could also be delivered to the third deputy director, but only in very rare cases, as when the director, the first deputy director, and the second deputy director were all absent at one time. The chief of the branch was also responsible for the classified room and logged in and out all classified material. Also he was the only person who had the keys to the classified room and to the safe in it. The door to the classified room had steel plates on both sides. There was one window in the room, and it had steel bars on it.

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(b) Supply Branch (Dzial Zaopatrzenia)

Ten people worked in the branch (mu): one branch chief, two steel purchasers, one bog iron ore purchaser, two machine purchasers, one lumber purchaser, one electric appliance purchaser, one vehicle parts purchaser, and one purchaser of miscellaneous items such as paint, grease, oil, and diesel oil. These persons were responsible for making purchases of the above-mentioned items for ZGOZ. They were also responsible for making plans on what needed to be purchased the following year. [redacted]

50X1-HUM

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50X1-HUM

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12

(c) Transportation Branch (Dzial Transportowy)

There were five persons working in the branch; one branch chief, two vehicle inspectors, and two clerks (nu).

The branch was responsible for assigning vehicles, for making inspections and insuring that the vehicles were being used properly and that maintenance was being kept up on them. It was also responsible for planning how much material would be transported the following year and how many additional vehicles would be needed to haul the increase in loads. The branch was at ulica Stalmacha 7.

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(d) Collections Branch (Dzial Inkasa)

About three people worked in this branch (nu). It was responsible for billing large consumers.² When the bill was made out, one copy went to the consumer and the other copy to the Bank of Poland (Narodowy Bank Polski - NBP), where all enterprises and factories kept their accounts. The bank took the amount of the bill from the consumer's account and added it to the account of ZGOZ. All figures on the amount of gas large consumers used were turned over to this branch.

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the same procedure was used when ZGOZ was billed by the coke plants. The cost of the gas was taken from the ZGOZ account and added to the account of the coke plant that supplied the gas. Part of this branch was at ulica Stalmacha 7, and part was on the 3d floor of the building on ulica Wolnosci.

(e) Social Branch (Dzial Socjalny)

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Two persons worked in this branch, the branch chief and one investigator (nu).

The branch was responsible for social affairs, such as the following: children under 16 were not supposed to work, women were not to lift anything heavier than 15 kg, pregnant women were to get a three-month vacation (usually 1½ months before delivery and 1½ months after delivery), and workers were supposed to get adequate medical treatment.

(4) Office of the Third Deputy Director for Investments (III Zastepca-Dyrektor Inwestycyjny)

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The Third Deputy Director of ZGOZ was Leonard SLOTA. He was responsible for all branch offices subordinate to his office and for all matters concerning investments. He was directly subordinate to the Director of ZGOZ.

The following branch offices were directly subordinate to the office of the Third Deputy Director:

(a) Technical Documentation Branch (Dzial Dokumentacji Technicznej)

Three persons worked in the branch: one made out work orders for the construction of pipelines; one made out work orders for the construction of purifying stations, compressor stations, reduction and measuring stations, and gas holders; and the third made out work orders for electrical construction work.

If the Director of ZGOZ wanted anything constructed in his area, he first had to submit his plan to ZPG. If ZPG approved the plan, the money was set aside and the approved plan was sent back to ZGOZ.

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13

The Director of ZGOZ then turned the approved plan over to the Third Deputy Director, who, in turn, turned it over to his Technical Documentations Branch, which used this plan to make out a work order and submitted it to the Gazoprojekt-Project Bureau of the Gas Industry (Gazoprojekt-Biuro Projektow Gazowniczych).³ The Project Bureau drew up the blueprints and specifications and sent one copy to PIG, one copy to the enterprise that was to do the construction work, and one copy back to ZGOZ, where it was checked by the Technical Documentation Branch. PIG then had the last word on any changes or revisions in blueprints.

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(b) Legal Branch (Dzial Prawny)

(mu). There was one lawyer and one clerk in the branch work.

The branch handled legal matters concerning new construction work. It worked in close coordination with the Technical Documentation Branch because the employees in the latter often had to get legal advice concerning new construction work.

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[redacted] the lawyer in the Legal Branch was a very competent individual, but the lawyer in PIG had the last word on the legal aspects of new construction work.

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(c) Technical Inspections Branch (Dzial Techniczno-Inspekcyjny)

There were five employees in this branch (mu): one branch chief; one pipeline inspector; one inspector of compressors and purifying stations, gas holders, and reduction and measuring stations; one inspector of electrical construction work; and one inspector of architectural work.

The branch was responsible for inspecting the progress of new construction work and for keeping track of the quality and quantity of work being done. Each inspector was responsible for inspecting that part of the work that was in his field.

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(d) Bill Reckoning Branch (Dzial Rozliczen Z Wykonawcami Inwestycji)

Three persons worked in this branch, including the branch chief (mu).

The branch was responsible for checking bills for construction work to make sure they were correct. After a bill was checked by the branch, it was signed by the person who checked the bill, stamped and sent to the third deputy director for his signature. Then the bill was sent back to the construction enterprise that did the work and from there it was sent to the NBP, which withdrew the amount of the bill from ZGOZ's account and added it to the account of the construction enterprise that did the work.

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[redacted] this branch had 30 days to check a bill. If it was not checked in 30 days, the construction enterprise that did the work could take it back and send it directly to the bank for payment.

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14

d. Zabrze District Raw Coal Gas Pipeline Network and Installations (Annex C)

(1) Background

There were 17 gas-producing installations in the Zabrze District, of which 16 were in Upper Silesia and one near KRAKOW. They consisted of 10 coke plants, six steel works, and one machine-manufacturing plant.

ZGOZ received approximately 202,000 m³/h of the total amount of gas produced by 12 of the 17 installations. Of the five from which it did not receive gas, one coke plant burned off its surplus gas, one steel works was under construction, and two steel works and one machine construction plant used all the gas they themselves produced, for their own needs.

Difficulties encountered by coke plants during autumn and winter included the following: (a) There was a shortage of railroad cars for shipping coke and receiving coal because of the increase in agricultural goods being transported during these months. [redacted] no plan to alleviate the situation.

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(b) There was a shortage of good coking coal in Poland. Three or four types of coal had to be mixed in order to produce good cokes, and sometimes it was necessary to import good coking coal from [redacted] Czechoslovakia. The situation was expected to improve in 1963 however, when a new coal basin containing good coking coal, which was recently discovered in PSZCZYNA, would go into operation.

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Almost all the steel works in Poland had difficulties with their machines, because they were operating without spares. [redacted] on many occasions production was held up because a machine had broken down and there was no spare to replace it. Another problem for the steel works was the shortage of scrap iron that was used in Martin open-hearth furnaces to produce Martin steel. [redacted]

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The nerve center of the gas pipeline system was in ZABRZE. Most of the ZGOZ pipelines converged in this area in order to effect better control of the flow of gas.

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(2) Gas-Producing Installations

Gas-producing installations had several things in common: they produced an average of 335m³ of raw coal gas per ton of coal; they operated an average of 320 days a year and were closed down or partly closed down 45 days a year for repairs; they sold naphthalene, phenol benzol, ammonia, and coal tar to the chemical industry;⁴ the raw coal gas they sold to ZGOZ had an average of 4100 k cal per m³ of gas, except for the Knurów Coke Plant's raw coal gas, which contained 4800 to 5000 k cal per m³ of gas; the size and type of construction for coke batteries was standard, they were 2-story buildings. The first floors of the buildings were made out of reinforced concrete and the second floors were made out of firebrick. The first floors of the buildings were 96m long and 15m wide, and the second were also 96m long, but 10m wide. The height of the buildings was 10m, and each building contained 1 coke battery or 60 coke ovens. Each gas-producing installation had a chemical section that was responsible for removing chemical properties from raw coal gas. This was done with gas scrub towers, which were similar in size, purpose, and type of construction to those used in the gas industry of the US. They were 35 m high, 3½ m in diameter and were made of steel.

The water cooling towers were standard in construction. The foundations were made out of reinforced-concrete beams and the water tanks were made of wood. Capacities of the water tanks varied; they could be easily increased by building up the sides of the tank.

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-15-

All coke plants, steel works, compressor stations, compressor and purifying stations and other large enterprises in Poland were guarded by civilian guards in special uniforms. They were hired and paid by the enterprise for which they worked, but the enterprise was told by the head of the city police how many guards it would use, how many of them would be armed, and what their posts would be. The city police also made periodic checks on the guards to see if they were doing their job and to see if the guard system was adequate. The uniform these guards wore was the same throughout Poland, and the name of the enterprise where each guard worked was written on his cap. They worked a 12-hour shift, after which they were off for 24 hours. [redacted] this was in accordance with state laws. The periods of duty were shorter in more sensitive enterprises.

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Each enterprise had a guard commander, who worked the day shift, and two deputy commanders, who worked the night shift. One hundred guards was called a guard company, and any lesser number was called a guard unit. [redacted]

[redacted] these guards [redacted] were positioned at entrances, exits, warehouses, areas where inflammable materials were stored, and some of them took payrolls and money to the bank in vehicles.

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-54-

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COMMENTS:

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2. [redacted] the following figures on costs of gas to consumers: Industrial consumers paid .25 zlotys per cu m of raw coal gas and .50 zlotys per cu m of purified coal gas; private consumers paid .50 zlotys for the first 25 cu m of purified gas and .25 zlotys for each cu m over 25 cu m.

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[redacted] the Blachownia Chemical Plant (Zaklady Chemiczne Blachownia) received 50 percent of the coal tar produced by steel works and coke plants in Poland. [redacted] the Blachownia Chemical Plant received 40 percent of the benzol produced by steel works and coke plants in Poland.

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[redacted] a pipeline from the Zdzeszowice Compressor and Purifying Station to the Piotrowice Raw and Purified Coal Gas Distributing Junction. This pipeline ran through the territory of the chemical plant, [redacted]

[redacted] The chemical plant was in the woods in BLACHOWNIA, next door to the Azoty Chemical Factory, and 1 kilometer from the SLAWIECICE-BLACHOWNIA-KEDZIERZYN Highway.

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It was the largest, most modern, and efficient chemical plant in Poland that was engaged in the distillation of coal tar and benzol, and it was constantly being enlarged. It had a large laboratory, and about 40 chemists were employed there.

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CONFIDENTIAL

55

[redacted] the plant was guarded very heavily. 50X1-HUM
 [redacted] on one relief there were 50 to 60 civilian guards, all armed and in
 special uniform, guarding this plant.

[redacted] the Sarzyna Chemical Factory (Fabryka
 Chemiczna Sarzyna) in SARZYNA, [redacted] which was mostly underground, received
 toluene from the Blachownia Chemical Factory and used it in the production of trotyl. 50X1-HUM

There was another factory, the Krywald Chemical Factory (Fabryka Chemiczna Krywald)
 in KRYWALD, that [redacted] received toluene from the Blachownia Chemical Factory.

[redacted] the plant produced four qualities of amonite, signal flares, gunpowder,
 and smokeless gunpowder. [redacted] there was a firing range at this factory
 where the penetrating power of antitank shells was tested. 50X1-HUM

[redacted] because of the testing and experimenting at the factory,
 there were, on the average, two or three accidents a year. In autumn 1957 there was
 an explosion there, and 15 people were killed. 50X1-HUM

6. [redacted] why older men had to travel around to
 give technical advice when this could be done by younger men. [redacted]
 there were very few young engineers left in East Germany because most of them had fled
 to the West. 50X1-HUM

8. [redacted] gas pipes were made out of normal steel, and the standards for steel
 in Poland were listed under Polish Standard for Steel (Polska Norma-Hutnicza PN-H),
 which was written by the Polish Committee on Standardization (Polski Komitet Normal-
 izacyjny - PKN). The PKN was subordinate to the Office of the Council of Ministers
 (Urząd Rady Ministrów). [redacted] concerning
 the quality of normal steel: 50X1-HUM

Tensile strength	35-45 kg per mm ²
Resistance to impact	25-35 kg per mm ²
Expansion	15-18 percent
Bending strength	180 degrees

Chemical Composition of Normal Steel in Poland

Carbon C	0.15 percent max
Phosphorus P	0.15 percent max
Silicon Si	0.005 percent max
Sulphur S	0.010 percent max
Manganese Mn	trace
Nickel Ni	trace

9. The Lenin Thermoelectric Plant did not pay ZGOZ for the gas it received, which was
 unusual, because all other thermoelectric plants and stations in the Zabrze District
 did pay ZGOZ for the gas they received (reason unknown).

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50X1-HUM

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56

11. [redacted] how much gas [redacted] filling stations
dispensed into vehicles [redacted] varied too much. Therefore in each case the
figures on how much gas these stations could receive are given.

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REPORT

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DATE DISTR. 2 Sept. 1960

SUBJECT : The Zabrze District Gasworks
in Poland

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THIS IS UNEVALUATED INFORMATION

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2

THE ZABRZE DISTRICT GASWORKS IN POLAND (C)

Table of Contents

	<u>Page Nr</u>
Introduction	5
1. <u>The Zabrze District Gasworks in Poland</u>	7
a. Location and Description of the Main Office of the Zabrze District Gasworks	7 7
b. Mission	7
c. Organization of the Main Office of ZGOZ in ZABRZE.	7
(1) Office of the Director.	7
(a) Personnel Branch	8
(b) Main Bookkeeping Branch.	8
(c) Planning Branch	8
(d) Employment Branch.	9
(e) Legal Advisors Section	9
(f) Factory Council.	9
(2) Office of the First Deputy Director-Chief Engineer.	9
(a) Production Branch.	9
(b) Chief Mechanics Branch	10
(c) Fire Prevention Branch	10
(d) Accident Prevention Branch	10
(e) General Technical Branch	10
(f) Designing Branch	11
(3) Office of the Second Deputy Director for Administrative Affairs	11 11
(a) Administrative Branch.	11
(b) Supply Branch.	11
(c) Transportation Branch.	12
(d) Collections Branch	12
(e) Social Branch.	12
(4) Office of the Third Deputy Director for Investments.	12
(a) Technical Documentation Branch.	12
(b) Legal Branch	13
(c) Technical Inspection Branch.	13
(d) Bill Reckoning Branch	13
d. Zabrze District Raw Coal Gas Network and Installations	14
(1) Background.	14
(2) Gas Producing Installations	14
(a) Zaborze Coke Plant	15
(b) Makoszowy Coke Plant	15
(c) Jadwiga Coke Plant	15
(d) Bobrek Steel Works	16

CONFIDENTIAL

CONFIDENTIAL

3
Table of Contents
(Continued)

	<u>Page Nr</u>
(e) Gliwice Coke Plant	16
(f) Walenty Coke Plant	16
(g) Kosciuszko Steel Works	17
(h) Knurów Coke Plant	18
(i) Debiensko Coke Plant	18
(j) Emma Coke Plant	19
(k) Zdzieszowice Coke Plant	19
(l) Lenin Steel Works	19
(m) Bierut Steel Works	19
(n) Pokoj Steel Works	20
(o) Florian Steel Works	20
(p) Zygmunt Steel Works	20
(q) Orzegów Coke Plant	20
 (3) Compressor Stations	 21
(a) Zaborze Compressor Station	21
(b) Walenty Compressor Station	22
(c) Makoszowy Compressor Station	22
(d) Gliwice Compressor Station	22
(e) Bobrek Compressor Station	23
(f) Jadwiga Compressor Station	23
(g) Kosciuszko Compressor Station	23
(h) Debiensko Compressor Station	23
 (4) Raw Coal Gas Consumers	 24
(a) Pokoj Steel Works	24
(b) Zgoda Steel Works	24
(c) Florian Steel Works	24
(d) Mikolaj Thermoelectric Station	25
(e) Batory Steel Works	25
(f) Konstal Coach Factory	25
(g) Chorzów Thermoelectric Station	25
(h) Pstrowski Thermoelectric Station	25
(i) Concordia Coke Plant	26
(j) CDS Central Distillation of Coal Tar Plant	26
(k) Zabrze Steel Works	26
(l) Zabrze Glass and Glass Wool Works	26
(m) Zabrze Thermoelectric Station	26
(n) Gliwice Thermoelectric Station	27
(o) Knurów Thermoelectric Plant	27
(p) Debiensko Thermoelectric Plant	27
(q) Marcel Thermoelectric Plant	27
(r) Lenin Thermoelectric Plant	27
(s) Zdzieszowice Thermoelectric Station	27
 (5) Raw Coal Gas Pipelines of the Zabrze District	 27
(6) Blast Furnace Gas Pipelines	33
 e. Zabrze District Purified Coal Gas Pipeline System	 33
(1) Background	33
(2) Compressor and Purifying Stations	34
(a) Zabrze I Compressor and Purifying Station	34
(b) Zabrze II Compressor and Purifying Station	34

CONFIDENTIAL

C-O-N-F-I-E-N-T-I-A-L

4
Table of Contents
(Continued)

50X1-HUM

	<u>Page Nr</u>
(c) Zdzeszowice Compressor and Purifying Station	34
(d) Radlin Compressor and Purifying Station	35
(e) Knurów Compressor and Purifying Station	35
(f) Carbochemia Compressor and Purifying Station	35
(g) Kraków Compressor and Purifying Station	36
(h) Częstochowa Compressor and Purifying Station	36
(3) Purified Coal Gas Pipelines and Installations of the Zabrze District	36
(4) Natural Gas Pipelines of the Zabrze District	50
(5) Planned Purified Coal Gas Pipelines of the Zabrze District	51
(6) Pipelines Under Construction in the Zabrze District	52
(7) Critical Points of the Zabrze Gas Pipeline Network	53
(a) Destruction of Coke Plants and Steel Works	54
(b) Destruction of the Nerve Center of the Zabrze Gas Pipeline Network	54
COMMENTS	54
Annexes A through E	57-146
A, A-1 Charts:	
A, A-1 Physical Lay-out Sketches of Main Office of ZGOZ in Zabrze, Poland; with legends	
B Organisational Chart of ZGOZ (names of positions only; no persons)	
C Maps Showing Gas Pipelines in the Zabrze District (C-1, C-3, C-5, C-9, C-21, C-22, C-28, C-29, C-30)	
Physical Layout Sketches of the Following Enterprises, with legends:	
C-2 Zabrze Coke Plant	
C-4 Makoszowy Coke Plant	
C-6 Jadruga Coke Plant	
C-7 Boksak Steel Works	
C-8 Gliwice (Gliwits) Coke Plant; Carbochemia Compressor Station	
C-10 Walentý Coke Plant	
C-11 Kosciuszko Steel Works	
C-12 Knurów Coke Plant	
C-13 Dobriansko Coke Plant	
C-14 Bema Coke Plant	
C-15 Zdzeszowice Coke Plant	
C-16 Lenin Steel Works	
C-17 Bierut Steel Works	
C-18 Polno Steel Works	
C-19 F Florian Steel Works	
C-20 Batory Steel Works	
C-23 Zabrze I Compressor and Purifying Station	
C-24 Zabrze II Compressor and Purifying Station	
C-25 Swietochlowice Compressor and Distributing Station	
C-27 Szczepaniec Compressor and Distributing Station	
C-31 Jednostka Steel Works, Siemianowice	
D, D-II Maps: Purified Coal Gas Pipelines and Natural Gas Pipelines in the Zabrze District	
E Organisational Chart of Agencies Subordinate to the Zabrze District Gasworks	

C-O-N-F-I-D-E-N-T-I-A-L

CONFIDENTIAL

5

50X1-HUM

THE ZABRZE DISTRICT GASWORKS IN POLAND (C)

Introduction

This report contains [] information on the Zabrze District Gasworks in Poland, which transported three types of gas in its pipelines: raw coal gas, purified coal gas, and natural gas. [] technical information regarding these three types of pipelines, their locations, the consumers they served, gas producers and processing installations, and the organization of the Zabrze District Gasworks []

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Although an integral part of the over-all pipeline system subordinate to the Zabrze District Gasworks, the raw coal gas pipelines around ZABRZE formed a separate pipeline system, which included producers of raw coal gas, the pipelines, processors, and consumers. To more clearly depict the pattern of raw coal gas pipelines, they are shown separately in Annex C, an overlay taken from maps with a scale of 1:100,000. It should be kept in mind, however, that this system was linked with the purified gas pipeline system and was not a separate network.

The purified coal gas pipeline system in the Zabrze district was a separate system, which is shown together with consumers and processors of purified coal gas in parts 1 and 2 of Annex D. Part 1 of Annex D also includes information on the transportation of natural gas.

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For a more detailed portrayal of the complex layout of the pipeline systems, subannexes with a scale of 1:25,000 and [] sketches of installation layouts, where known, are included. The subannexes support Annex C by showing raw coal gas pipelines, but they also include details on purified gas pipelines. In certain instances, installations were outside the area of pipeline concentration represented in Annex C; they are, therefore, not shown on the 1:25,000 sketches.

Because of the three varieties of pipelines and their representation on overlays of different scales, various systems of identification of producers, processors, and consumers were used. In Annex C letters were used to show producers, and numbers to show processors and consumers of raw coal gas. In Annex D, parts 1 and 2, letters represent compressor and purifying stations, and numbers represent consumers and processors of purified coal gas. In addition, Part 1 of Annex D shows natural gas consumers and dispensing stations.

Items of interest shown on Part 2 of Annex D are not represented on the 1:25,000 subannexes to Annex C. The items shown in Annex C which again appear on the 1:25,000 subannexes are in most cases represented by a Roman numeral, in order to call attention to items concerned only with raw coal gas processing or consumption. Legends accompany annexes to identify items of interest.

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The expression m³/h used throughout this report is to be read as cubic meters per hour.

The coordinates used for installations in the area of concentration are taken from map sheets with a scale of 1:25,000.

<u>Location</u>	<u>Geographic</u>	<u>UTM</u>
BEDZIN (BENDSBURG)	N50-19, E19-08	CA 675765
BLACHOWNIA (BLECHHAMMER)	N50-22, E18-17	CA 0882
BOBREK (BOBREK-KARF)	N50-19, E18-54	CA 485788

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6



<u>Location</u>	<u>Geographic</u>	<u>UTM</u>
BYTOM	N50-21, E18-55	CA 5279
CHORZOW	N50-19, E18-59	CA 5675
CZELADZ	N50-19, E19-06	CA 6476
DABROWA GORNICZA	N50-20, E19-12	CA 7176
DEBIENSKO	N50-09, E18-41	CA 3460
HAJDUKI BATORY	N50-16, E18-57	CA 5570
HAJDUKI WIELKIE	N50-16, E18-57	CA 515720
KEDZIERZYN (HEYDEBRECK)	N50-21, E18-12	CA 015810
KNUROW	N50-13, E18-41	CA 3566
KOZLE (COSEL)	N50-20, E18-10	BA 9780
KRYWALD	N50-12, E18-39	CA 3265
LABEDY (LABAND)	N50-20, E18-37	CA 3180
LAGIEWNIKI	N50-18, E18-55	CA 5176
MAKOSZOWY (MAKOSCHAU)	N50-15, E18-46	CA 403705
MIKOLOW	N50-10, E18-54	CA 5060
MILOWICE	N50-18, E19-08	CA 6673
MYSLOWICE	N50-14, E19-08	CA 6767
NOWY BYTOM	N50-17, E18-54	CA 4973
ORZEGOW	N50-18, E18-53	CA 4977
PARUSZOWIEC	N50-05, E18-33	CA 2654
PIOTRKOW	N50-23, E19-42	DB 0995
PROSZOWICE	N50-12, E20-18	DA 4860
PSZCZYNA	N49-58, E18-57	CA 5538
RACIBORZ	N50-06, E18-13	CA 0253
RADLIN	N50-01, E18-32	CA 2444
RUDA-SLASKA	N50-17, E18-51	CA 4872
RUDNIKI	N50-53, E19-16	CB 7739
RYBNIK	N50-05, E18-33	CA 2442
RYSKOWICE	N50-23, E18-39	CA 3286

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7



<u>Location</u>	<u>Geographic</u>	<u>UTM</u>
SIEMIANOWICE SLASKIE	N50-17, E19-02	CA 6074
SOSNOWIEC	N50-19, E19-08	CA 6774
SWIETOCHLOWICE	N50-17, E18-57	CA 5273
SZCZAKOWA	N50-14, E19-18	CA 7967
SZOPIENICE	N50-17, E19-07	CA 6470
TARNOWSKIE GORY	N50-27, E18-51	CA 4991
TYCHY	N50-07, E18-59	CA 5655
ZABKOWICE	N50-23, E19-16	CA 7881
ZABRZE-MACIEJOW	N50-18, E18-37	CA 2976
ZDZIESZOWICE	N50-25, E18-07	BB 9589

1. The Zabrze District Gasworks in Poland

a. Location and Description of the Main Office of the Zabrze District Gasworks. (For pinpoint location and floor plan of the main office of ZGOZ, see Annexes A and A-1, Figures 1 through 4.)

The main office of ZGOZ consisted of two red brick buildings with brown trimmings. The main entrance to ZGOZ was at ulica Wolnosci 311. This was a dual 4- and 3-story building, 14 meters high from the sidewalk to the edge of the roof, 16 meters wide across the front, and about 40 meters from the front of the building to the rear. The back of the building joined the back of a dual 3- and 2-story building that was facing ulica Dworcowa. A doorway had been broken through the ends of these two buildings on the second floor allowing passage from one building to the other. The two buildings contained most of the administrative branches of the Zabrze District Gasworks. The remaining administrative branches were at ulica Stalmacha 7 in ZABRZE, and are identified by asterisks in Annex B.

b. Mission

The mission of ZGOZ was to receive raw coal gas from coke plants and steel works and to distribute part of it among consumers of that type of gas, and to purify the remainder and distribute it among purified coal gas consumers. In addition, it also received a small quantity of natural gas from the Tarnow District Gasworks. (Zakłady Gazownictwa Okregu Tarnowskiego - ZGOT)¹ and distributed it among natural gas consumers, and gas filling stations.

The Zabrze District Gasworks was also responsible for the operation, maintenance, repair, and conservation of all equipment and installations subordinate to it.

c. Organization of the Main Office of ZGOZ in ZABRZE (See Annex B)

(1) Office of the Director

The director of ZGOZ was Alojzy GOCYLA. He was responsible for the entire ZGOZ and had to answer only to the director of the Association of the Gas Industry (Zjednoczenie Przemyslu Gazowniczego - ZPG). He had one private

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50X1-HUM

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8

secretary.

The following branch offices were directly subordinate to the office of the director.

(a) Personnel Branch (Dzial Personalny)

Two people, (nu), worked in this branch, the branch chief, and an investigator who checked the backgrounds of prospective employees.

The branch was responsible for keeping the personnel records of all employees of ZGOZ, and for investigating prospective employees. For example, if a man wanted to work in ZGOZ, his background was first checked to find out where he had worked before, if he was a good worker, if he drank heavily, if he was a troublemaker, and if he was a Communist Party member. The branch also kept a card file on each employee showing the length of service in ZGOZ and whether or not the employee was a Party member.

(b) Main Bookkeeping Branch (Dzial Głównego Księgowego)

There were about 30 people working in this branch, the chief and 29 bookkeepers (nu).

The branch was responsible for keeping the financial records of ZGOZ. For example, the sale and purchase of gas, major repairs, minor repairs, investment in new construction work, and the ZGOZ payroll were each kept under a separate account. The branch had to keep a record of how much money was coming into and going out of each account.

The branch was also responsible for keeping the records for the depreciation fund. [redacted] described thus: Each piece of equipment was given a certain number of years of life expectancy, and, in order to be able to replace a piece of equipment when it wore out, funds had to be available to purchase a replacement. To insure this, the number of years a piece of equipment was supposed to last was divided into its total cost and the amount of money was sent to the bank every year. In this way the money to buy a new piece of equipment was on hand when the old one reached its life expectancy. The branch was on the second and third floors of the building at ulica Wolności 311. [redacted]

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(c) Planning Branch (Dzial Planowania)

Four people worked in this branch (nu), the chief and three planners.

The branch was responsible for making plans for one year in advance on the needs for gas, and what the cost would be to ZGOZ and the consumer. The figures on the future needs of gas were obtained by making surveys of all consumers of gas in the Zabrze District and finding out how much gas each would require in the future.

The branch was also responsible for making plans for future construction work. It had to plan what type construction work was needed and what it would cost ZGOZ. These plans were also estimated for one year in advance.

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CONFIDENTIAL

CONFIDENTIAL

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9

(d) Employment Branch (Dzial Zatrudnienia)

There were six people working in this branch (nu); two checked work norms, three made out payrolls and one was the chief.

The branch, which was at ulica Stalmacha 7, was responsible for acquiring new workers for ZGOZ, for keeping a record of the number of people employed in ZGOZ, for keeping a record of how much of the monthly work norms were fulfilled, and for making out the payrolls for ZGOZ. This branch also kept a manning table tabulation of positions and workers filling them.

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(e) Legal Advisors Section (Rada Prawny)

There was only one person (nu) working in this branch, a lawyer who handled legal problems for the ZGOZ, such as a small consumer not paying for the gas he received, or a pipeline having to be laid through a collective farm, or a coke plant producing coal gas of a substandard quality.

this man was a qualified lawyer, capable of making his own decisions on any legal matter. However, the lawyer in the State Gas Inspection Department (Panstwowa Inspekcja Gazownictwa - PIG), had the last say on legal matters.

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(f) Factory Council (Rada Zakladowa)

There were three people working in this branch: the chief, one secretary, and one advisor (nu).

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The branch was responsible for seeing that workers received their correct pay, vacations, pensions, and overtime pay.

if a man had to work overtime, he was supposed to receive 50 percent more pay for the first two hours' overtime, 100 percent more pay for the second two hours' overtime, and 100 percent more for the whole overtime period if he worked six or more hours' overtime.

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(2) Office of the First Deputy Director-Chief Engineer (I Zastepca Dyrektora Naczelnego-Inzynier)

The first deputy director was Engineer GALICKI. He was directly subordinate to the director of ZGOZ and was in charge when the director was absent. GALICKI was responsible for all branches subordinate to his office and for all technical matters in ZGOZ. He had one private secretary who worked with him.

The following branch offices were directly subordinate to the office of the first deputy director:

(a) Production Branch (Dzial Produkcji)

Ten persons worked in this branch, the chief of the branch, (nu), four planimeter operators, three persons who checked the quality of the gas, and two who took care of branch administrative matters.

The branch was responsible for keeping a check on the quality and quantity of coal gas that ZGOZ was receiving from the coke plants, and the quantity of coal gas larger consumers were receiving from ZGOZ. It also had to coordinate with the coke plants from which it received gas to find out how much gas ZGOZ would receive for 30 days, three months, and a year in advance. The figures for 30 days in advance were used to make a chart showing how much gas large consumers

CONFIDENTIAL

CONFIDENTIAL

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30

could expect to receive per hour for 30 days in advance. This was not a fixed figure, however, and could be expected to fluctuate. Whenever a coke plant wanted to reduce the amount of gas it was sending to ZGOZ, because of repairs or some other reason, it had to notify the chief of the production branch ahead of time. If this reduction in gas would present a serious problem, the chief of the production branch would notify the director of ZGOZ, who would in turn notify the director of ZPG. A meeting would then be called between representatives of ZPG, ZGOZ, the Central Administration of the Metallurgical Industry (Centralny Zarząd Przemysłu Hutniczego - CZPH), and the coke plant to try to resolve the situation. [redacted]

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(b) Chief Mechanic Branch (Dział Głównego Mechanika)

There were 12 employees in this branch; three electrical engineers, six mechanical engineers for major repairs, two mechanical engineer inspectors, and the branch chief (nn).

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The branch was responsible for all machines subordinate to ZGOZ. It was also responsible for the planning of all construction work. [redacted] its employees spent most of their time giving advice and making inspections. The branch was at ulica Stalmachów 7. [redacted]

(c) Fire Prevention Branch (Dział Ochrony Przeciwpożarowej)

One man worked in this branch. He was responsible for enforcing fire regulations and for organizing a 30 or 25 man emergency fire-fighting crew from among the employees of ZGOZ. He trained the crew one hour every week.

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(d) Accident Prevention Branch (Dział Bezpieczeństwa Pracy)

There were two people working in the branch (nn), and they were responsible for enforcing safety regulations in ZGOZ. The safety regulations themselves were made by the Ministry of Health (Ministerstwo Zdrowia) and the Ministry of Labor (Ministerstwo Pracy). The branch established the procedures required to implement the regulations.

The following were some of the safety regulations: All welders had to use goggles while welding; all women working on machines had to have their hair tied back; persons working on machines had to either roll up their sleeves or tie their cuffs so they would not hang loose; no objects could be thrown in the workshops; areas where welding was going on had to be screened off to keep people from looking at the flame; areas where cranes were working had to be fenced off to prevent cranes from lifting loads over workers; and no horseplay was allowed in any place at any time. [redacted]

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(e) General Technical Branch (Dział Ogólnie Techniczny)

There were 10 people in the branch (nn): one chief and 9 draftsmen.

The branch was responsible for keeping one copy of all blueprints for minor construction work, and for making over old blueprints before they became illegible.

The branch was also responsible for having the pipelines checked at various intervals to determine their condition. [redacted]

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CONFIDENTIAL

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CONFIDENTIAL

11

all pipelines laid through swamps were checked every 5 years and all pipelines laid through dry areas were checked every 10 years. The reason pipelines in swamps were checked more frequently was because the preservative on them wore off more quickly. The branch was at ulica Stalmacha 7. [redacted]

(f) Designing Branch (Dzial Konstrukcyjny)

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Five people worked in this branch, a chief and four designers (mu).

The branch was a research branch responsible for designing improvements for the gas pipeline system in the Zabrze District. For example, if a certain type of gasket was not working properly, the branch had to design a better one. [redacted]

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(3) Office of the Second Deputy Director for Administrative Affairs (II Zastepca-Dyrektor Administracyjny)

The second deputy director was PELIK, (fmu). He was responsible for all branches subordinate to his office and for all administrative matters in ZGOZ. He was directly subordinate to the Director of ZGOZ, and he had a private secretary.

The following branch offices were directly subordinate to the office of the second deputy directors:

(a) Administrative Branch (Dzial Administracyjny)

Fourteen persons worked in this branch (mu); the chief, his secretary, five typists, three persons who took care of office supplies and the maintenance of the building, three persons who handled all incoming and outgoing correspondence, and one messenger girl.

The branch chief and his secretary were the only ones who could receive classified correspondence, but they were not allowed to open it. All classified correspondence had to be delivered to the director of ZGOZ by the chief of the administrative branch. If the director was not present, it had to be delivered to the first deputy director, or, if both were absent, to the second deputy director. [redacted] classified correspondence could also be delivered to the third deputy director, but only in very rare cases, as when the director, the first deputy director, and the second deputy director were all absent at one time. The chief of the branch was also responsible for the classified room and logged in and out all classified material. Also he was the only person who had the keys to the classified room and to the safe in it. The door to the classified room had steel plates on both sides. There was one window in the room, and it had steel bars on it.

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(b) Supply Branch (Dzial Zaopatrzenia)

Ten people worked in the branch (mu): one branch chief, two steel purchasers, one bog iron ore purchaser, two machine purchasers, one lumber purchaser, one electric appliance purchaser, one vehicle parts purchaser, and one purchaser of miscellaneous items such as paint, grease, oil, and diesel oil. These persons were responsible for making purchases of the above-mentioned items for ZGOZ. They were also responsible for making plans on what needed to be purchased the following year. [redacted]

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CONFIDENTIAL

CONFIDENTIAL

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12

(c) Transportation Branch (Dzial Transportowy)

There were five persons working in the branch; one branch chief, two vehicle inspectors, and two clerks (nu).

The branch was responsible for assigning vehicles, for making inspections and insuring that the vehicles were being used properly and that maintenance was being kept up on them. It was also responsible for planning how much material would be transported the following year and how many additional vehicles would be needed to haul the increase in loads. The branch was at ulica Stalmacha 7. [redacted]

(d) Collections Branch (Dzial Inkasa)

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About three people worked in this branch (nu). It was responsible for billing large consumers.² When the bill was made out, one copy went to the consumer and the other copy to the Bank of Poland (Narodowy Bank Polski - NBP), where all enterprises and factories kept their accounts. The bank took the amount of the bill from the consumer's account and added it to the account of ZGOZ. All figures on the amount of gas large consumers used were turned over to this branch.

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[redacted] the same procedure was used when ZGOZ was billed by the coke plants. The cost of the gas was taken from the ZGOZ account and added to the account of the coke plant that supplied the gas. Part of this branch was at ulica Stalmacha 7, and part was on the 3d floor of the building on ulica Wolnosci. [redacted]

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(e) Social Branch (Dzial Socjalny)

Two persons worked in this branch, the branch chief and one investigator (nu).

The branch was responsible for social affairs, such as the following: children under 16 were not supposed to work, women were not to lift anything heavier than 15 kg, pregnant women were to get a three-month vacation (usually 1½ months before delivery and 1½ months after delivery), and workers were supposed to get adequate medical treatment. [redacted]

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(4) Office of the Third Deputy Director for Investments (III Zastepca-Dyrektor Inwestycyjny)

The Third Deputy Director of ZGOZ was Leonard SLOTA. He was responsible for all branch offices subordinate to his office and for all matters concerning investments. He was directly subordinate to the Director of ZGOZ.

The following branch offices were directly subordinate to the office of the Third Deputy Director:

(a) Technical Documentation Branch (Dzial Dokumentacji Technicznej)

Three persons worked in the branch: one made out work orders for the construction of pipelines; one made out work orders for the construction of purifying stations, compressor stations, reduction and measuring stations, and gas holders; and the third made out work orders for electrical construction work.

If the Director of ZGOZ wanted anything constructed in his area, he first had to submit his plan to ZPG. If ZPG approved the plan, the money was set aside and the approved plan was sent back to ZGOZ.

CONFIDENTIAL

CONFIDENTIAL

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13

The Director of ZGOZ then turned the approved plan over to the Third Deputy Director, who, in turn, turned it over to his Technical Documentations Branch, which used this plan to make out a work order and submitted it to the Gazoprojekt-Project Bureau of the Gas Industry (Gazoprojekt-Biuro Projektow Gazowniczych).³ The Project Bureau drew up the blueprints and specifications and sent one copy to PIG, one copy to the enterprise that was to do the construction work, and one copy back to ZGOZ, where it was checked by the Technical Documentation Branch. PIG then had the last word on any changes or revisions in blueprints. [redacted]

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(b) Legal Branch (Dzial Prawny)

There was one lawyer and one clerk in the branch (nu). The lawyer kept all the government regulations concerning new construction work.

The branch handled legal matters concerning new construction work. It worked in close coordination with the Technical Documentation Branch because the employees in the latter often had to get legal advice concerning new construction work.

[redacted] the lawyer in the Legal Branch was a very competent individual, but the lawyer in PIG had the last word on the legal aspects of new construction work. [redacted]

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(c) Technical Inspections Branch (Dzial Techniczno-Inspekcyjny)

There were five employees in this branch (nu): one branch chief; one pipeline inspector; one inspector of compressors and purifying stations, gas holders, and reduction and measuring stations; one inspector of electrical construction work; and one inspector of architectural work.

The branch was responsible for inspecting the progress of new construction work and for keeping track of the quality and quantity of work being done. Each inspector was responsible for inspecting that part of the work that was in his field. [redacted]

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(d) Bill Reckoning Branch (Dzial Rozliczen Z Wykonawcami Inwestycji)

Three persons worked in this branch, including the branch chief (nu).

The branch was responsible for checking bills for construction work to make sure they were correct. After a bill was checked by the branch, it was signed by the person who checked the bill, stamped and sent to the third deputy director for his signature. Then the bill was sent back to the construction enterprise that did the work and from there it was sent to the NBP, which withdrew the amount of the bill from ZGOZ's account and added it to the account of the construction enterprise that did the work.

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[redacted] this branch had 30 days to check a bill. If it was not checked in 30 days, the construction enterprise that did the work could take it back and send it directly to the bank for payment. [redacted]

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CONFIDENTIAL

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14

d. Zabrze District Raw Coal Gas Pipeline Network and Installations (Annex C)

(1) Background

There were 17 gas-producing installations in the Zabrze District, of which 16 were in Upper Silesia and one near KRAKOW. They consisted of 10 coke plants, six steel works, and one machine-manufacturing plant.

ZGOZ received approximately 202,000 m³/h of the total amount of gas produced by 12 of the 17 installations. Of the five from which it did not receive gas, one coke plant burned off its surplus gas, one steel works was under construction, and two steel works and one machine construction plant used all the gas they themselves produced, for their own needs.

Difficulties encountered by coke plants during autumn and winter included the following: (a) There was a shortage of railroad cars for shipping coke and receiving coal because of the increase in agricultural goods being transported during these months. [] no plan to alleviate the situation. 50X1-HUM (b) There was a shortage of good coking coal in Poland. Three or four types of coal had to be mixed in order to produce good cokes, and sometimes it was necessary to import good coking coal from West Germany and Czechoslovakia. The situation was expected to improve in 1963 however, when a new coal basin containing good coking coal, which was recently discovered in PSZCZYNA, would go into operation.

Almost all the steel works in Poland had difficulties with their machines, because they were operating without spares. [] on many 50X1-HUM occasions production was held up because a machine had broken down and there was no spare to replace it. Another problem for the steel works was the shortage of scrap iron that was used in Martin open-hearth furnaces to produce Martin steel. [] no plan to improve either of these situations. 50X1-HUM

The nerve center of the gas pipeline system was in ZABRZE. Most of the ZGOZ pipelines converged in this area in order to effect better control of the flow of gas.

(2) Gas-Producing Installations

Gas-producing installations had several things in common: they produced an average of 335m³ of raw coal gas per ton of coal; they operated an average of 320 days a year and were closed down or partly closed down 45 days a year for repairs; they sold naphthalene, phenol benzol, ammonia, and coal tar to the chemical industry;⁴ the raw coal gas they sold to ZGOZ had an average of 4100 k cal per m³ of gas, except for the Knurów Coke Plant's raw coal gas, which contained 4800 to 5000 k cal per m³ of gas; the size and type of construction for coke batteries was standard, they were 2-story buildings. The first floors of the buildings were made out of reinforced concrete and the second floors were made out of firebrick. The first floors of the buildings were 96m long and 15m wide, and the second were also 96m long, but 10m wide. The height of the buildings was 10m, and each building contained 1 coke battery or 60 coke ovens. Each gas-producing installation had a chemical section that was responsible for removing chemical properties from raw coal gas. This was done with gas scrub towers, which were similar in size, purpose, and type of construction to those used in the gas industry [] They were 35 m high, 3½ m in diameter and were made of steel. 50X1-HUM

The water cooling towers were standard in construction. The foundations were made out of reinforced-concrete beams and the water tanks were made of wood. Capacities of the water tanks varied; they could be easily increased by building up the sides of the tank.

CONFIDENTIAL

CONFIDENTIAL

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15



All coke plants, steel works, compressor stations, compressor and purifying stations and other large enterprises in Poland were guarded by civilian guards in special uniforms. They were hired and paid by the enterprise for which they worked, but the enterprise was told by the head of the city police how many guards it would use, how many of them would be armed, and what their posts would be. The city police also made periodic checks on the guards to see if they were doing their job and to see if the guard system was adequate. The uniform these guards wore was the same throughout Poland, and the name of the enterprise where each guard worked was written on his cap. They worked a 12-hour shift, after which they were off for 24 hours. [redacted] this was in accordance with state laws. The periods of duty were shorter in more sensitive enterprises. 50X1-HUM

Each enterprise had a guard commander, who worked the day shift, and two deputy commanders, who worked the night shift. One hundred guards was called a guard company, and any lesser number was called a guard unit. [redacted] most of them were positioned at entrances, exits, warehouses, areas where inflammable materials were stored, and some of them took payrolls and money to the bank in vehicles. 50X1-HUM

- (a) Zaborze Coke Plant (See Annex C, Item A; Annex C-1, Item I; and Annex C-2)

It was in the city of ZABRZE on ulica Pawlicki and it produced about 14,000 m³/h of raw coal gas. About 6500 m³/h of this was used by the Zaborze Coke Plant for its own needs and about 7500 m³/h of it was sold to ZGOZ.

The Zaborze Coke Plant used 1000 tons of coal per 24-hour period in its coke ovens. The coal was received from coal mines in Upper Silesia.

The Zaborze Coke Plant was very old, but it was modernized in 1945 and was in good condition. [redacted] estimated the labor force as about 1000 persons. It was guarded by about 60 armed civilian guards, dressed in special uniforms. 50X1-HUM

- (b) Makoszowy Coke Plant (See Annex C, Item B; Annex C-3, Item VIII; and Annex C-4)

This coke plant, which was built before World War I, produced about 56,000 m³/h of raw coal gas. About 28,000 m³/h of it was used by the Makoszowy Coke Plant for its own needs and about 28,000 m³/h was sold to ZGOZ.

The coke plant used about 4000 tons of coal per 24-hour period in its coke ovens. The coal was received from the Makoszowy Coal Mine, located next door to it.

The plant was built before World War I and was in very poor condition because coal had been taken, at one time, from veins under the coke plant, causing the buildings of the plant to tilt. Although continual repairs were being made, this did not help.

[redacted] estimated the labor force of the Makoszowy Coke Plant as about 1400 workers. This included about 30 armed civilian guards in special uniform. 50X1-HUM

- (c) Jadwiga Coke Plant (See Annex C, Item C; Annex C-5, Item XXIII; and Annex C-6)

This plant was on ulica Pstrowskiego in the Biskupice District of ZABRZE. It was an old plant built before World War I, but it was

CONFIDENTIAL

CONFIDENTIAL

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16



repaired and modernized in 1948 and was in good condition. Thirty of the coke ovens in this plant were built in 1955 and 60 were built in 1948. It produced about 21,000 m³/h of raw coal gas. About 10,500 m³/h of the gas was used for its own needs, and about 10,500 m³/h was sold to ZGOZ.

The plant used about 1500 tons of coal per 24-hour period in its coke ovens. The coal was received from coal mines located in Upper Silesia.

[redacted] estimated the labor force of the plant as about 1000 workers. Included in this number were about 30 armed civilian guards in special uniforms. 50X1-HUM

- (d) Bobrek Steel Works (See Annex C, Item D; Annex C-5, Item XXI; and Annex C-7)

The steel works was situated in BOBREK. A coke plant that was an integral part of the steel works produced about 32,000 m³/h of raw coal gas. ZGOZ was supposed to receive 5000 to 8000 m³/h of the gas; however, on many occasions ZGOZ did not receive any gas from the steel works, but had to send it gas. During a year, ZGOZ usually gave the steel works about as much gas as it received from it.

[redacted] the reason for this was that the steel works itself required a lot of gas to burn in coke ovens to produce gas, to burn in Martin furnaces to smelt steel, and to burn in soaking pits in order to heat steel. The gas used for the above-mentioned purposes, however, was a mixture of raw coal gas and blast furnace gas (1 m³ of raw coal gas to 3 m³ of blast furnace gas) and not raw gas alone. The blast furnace gas used in this mixture was also produced at the Bobrek Steel Works. 50X1-HUM

The steel works used about 2000 tons of coal in its coke ovens each 24 hours, which was received from coal mines located in Upper Silesia.

The Bobrek Steel Works was built before World War I but was modernized after World War II and was in good condition.

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[redacted] the labor force of the Bobrek Steel Works was about 8000 workers. Included in this number were about 150 armed civilian guards in special uniforms.

- (e) Gliwice Coke Plant (See Annex C, Item E; Annex C-3, Item XIII; and Annex C-8)

This coke plant was on ulica Pszczynska in GLIWICE. It produced about 42,000 m³/h of raw coal gas. About 21,000 m³/h of the gas was used by the coke plant for its own needs and about 21,000 m³/h was sold to ZGOZ.

The Gliwice Coke Plant used in its coke ovens every 24 hours about 3000 tons of coal, which was received from coal mines in Upper Silesia.

The coke plant was built before World War I but was completely modernized between 1952 and 1955 and was in good condition.

[redacted] estimated the labor force of the Gliwice Coke Plant as about 2000 workers. This included about 40 armed civilian guards in special uniforms. 50X1-HUM

- (f) Walenty Coke Plant (See Annex C, Item F; Annex C-9, Item XXV; and Annex C-10)

This coke plant was situated in the city of RUDA SLASKA. It produced about 70,000 m³/h of raw coal gas. About 40,000 to 45,000 m³/h of

CONFIDENTIAL

CONFIDENTIAL

17

50X1-HUM

the gas was sold to ZGOZ, and about 25,000 m³/h was mixed with blast furnace gas, received from the Pokoj Steel Works, about 3 km from the Walenty Coke Plant, and consumed at the Walenty Coke Plant.

This coke plant used about 5000 tons of coal each 24 hours. The coal came from the Walenty-Wawel Coal Mine, which was next door to the coke plant.

The Walenty Coke Plant was built before World War I and was modernized by the Germans during World War II. It was in very poor condition because of the large amount of coal and coke dust in the air, caused by coal sorting at the Walenty-Wawel Coal Mine and coke sorting at the Walenty Coke Plant. The coal dust hampered the operation of precision machines and caused continual breakdowns.

[redacted] cancer of the lungs was a very serious problem in Upper Silesia, which had more cases of this disease than any other part of Poland. [redacted], until World War II there was a much higher incidence of tuberculosis than of lung cancer in Upper Silesia, but since the beginning of World War II lung cancer cases had increased at an alarming rate and in 1958 far outtran cases of tuberculosis. The increase was caused by the tremendous amounts of coke and coal dust and other impurities in the air from the coke plants, coal mines, and steel works in the area. [redacted] an eighth of an inch of coal dust formed on a windowsill over night in Upper Silesia.

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The possibility of putting electric filters on the chimneys of enterprises that created impurities in the air was discussed, but there were no funds for such a costly project.

[redacted] estimated the labor force at the Walenty Coke Plant as about 1500 workers. This included about 30 armed civilian guards in special uniform.

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(g) Kosciuszko Steel Works (See Annex C, Item G; Annex C-5, Item XVII; and Annex C-11)

This steel works, which was in CHORZOW, included a coke plant as an integral part and produced about 36,000 m³/h of raw coal gas. About 20,000 m³/h of the gas was sold to ZGOZ and about 16,000 m³/h was mixed with blast furnace gas (3 m³ of blast furnace gas to 1 m³ of raw coal gas); the mixture was burned in coke ovens, Martin furnaces, and soaking pits at the steel works.

The steel works was built before World War I but was partly modernized in 1954 and was in good condition. Of its coke ovens, 120 were built in 1954 and 60 during World War I. It used 2500 tons of coal each 24 hours in its coke ovens.

The Kosciuszko Steel Works was the largest producer of railroad rails in Poland. It not only produced rails for local use, but also exported a large quantity to the USSR, China, Bulgaria, Rumania, and Albania (amount unknown). It also produced U, L, I, and channel beams, used in the construction of bridges and industrial buildings.

CONFIDENTIAL

CONFIDENTIAL

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19

[] estimated the labor force of the Kosciuszko Steel Works as about 4000 workers. This included about 200 armed civilian guards in special uniforms. 50X1-HUM

- (h) Knurów Coke Plant (See Annex C, Item H; Annex C-3, Item X; and Annex C-12)

This plant was in KNUROW, and it produced about 22,000 m³/h of raw coal gas. About 11,000 m³/h of the gas was used by the coke plant for its own needs and about 11,000 m³/h was sold to ZGOZ.

The Knurów Coke Plant had a chemical plant that was an integral part of it. Part of the extra gas produced by the coke plant was first sent to the chemical plant. The chemical plant removed hydrogen from the gas, which was used to produce synthetic ammonia and other chemical products. Then it allowed the gas to join the remaining extra gas going to ZGOZ. Because part of the gas going to ZGOZ had hydrogen removed from it, the quality of the gas received from the Knurów coke plant was higher than the gas received from other gas-producing installations. Source said that the quality of the gas received from the Knurów Coke Plant was 4800 to 5000 K cal per m³.

The coke plant used in its coke ovens each 24 hours about 1500 tons of coal, which was received from coal mines in Upper Silesia.

The Knurów Coke Plant was built during World War I but was modernized after World War II, and was in good condition. Originally there was a plan to enlarge the coke plant and to increase its output by 1960. In fact, one reason for building the Knurów Compressor and Purifying Station in 1956 was to handle the increase in raw coal gas which would be received from the plant. But the plan did not materialize because shortly after its approval another plan was submitted to construct a steel works in CZESTOCHOWA. This was also a good plan, but there was not enough money and material to build a new steel works and to enlarge the Knurów Coke Plant, so it was decided to drop the plan to enlarge the Knurów Coke Plant and to go ahead and construct a steel works in CZESTOCHOWA. [] they had already started building the steel works [] and [] the name was the Bierut Steel Works. It was supposed to be finished in 1965. 50X1-HUM

* [] estimated the labor force of the Knurów Coke Plant as about 2000 workers. Included in this number were about 35 armed civilian guards dressed in special uniforms. 50X1-HUM

- (i) Debiensko Coke Plant (See Annex C, Item I; and Annex C-13)

This coke plant was in the city of DEBIENSKO, and it produced about 21,000 m³/h of raw coal gas. About 10,000 m³/h was used for its own needs and about 11,000 m³/h was sold to ZGOZ.

The Debiensko Coke Plant used about 1500 tons of coal each 24 hours in its coke ovens.

The condition of the plant was good except for 60 coke ovens which were built before World War I. The plant itself was also built before World War I but had been modernized after World War II.

[] the labor force of the Debiensko Coke Plant was about 1800 workers. This included about 30 armed civilian guards in special uniforms. 50X1-HUM

CONFIDENTIAL

CONFIDENTIAL

19

50X1-HUM

(j) Emma Coke Plant (See Annex C-14)

This coke plant, in RADLIN at coordinates N50-03, E18-28, and UTM CA-190479, produced about 21,000 m³/h of raw coal gas. About 10,000 m³/h of this gas was used by the plant for its own needs and about 11,000 m³/h was sold to ZG0Z. The plant used about 1500 tons of coal in its coke ovens each 24 hours.

This coke plant was built before World War I but was completely modernized after World War II and was in good condition. [redacted] estimated the labor force as about 2000 workers, including about 20 armed civilian guards in special uniforms. 50X1-HUM

(k) Zdziessowice Coke Plant (See Annex C-15)

This coke plant, in ZDZIESZOWICE at coordinates N50-25, E18-09, and UTM BA-975889, produced about 32,000 m³/h of raw coal gas. About 15,000 m³/h of the gas was used for its own needs and about 17,000 m³/h was sold to ZG0Z.

The plant was built in 1930 and was in good condition. It used about 2200 tons of coal each 24 hours in its coke ovens. [redacted] estimated the labor force at about 2500 workers, including about 60 armed civilian guards in special uniforms. 50X1-HUM

(l) Lenin Steel Works (See Annex C-16)⁵

This steel works was in PROSZOWICE at coordinates N50-04, E20-05, and UTM DA-351477. A coke plant which was an integral part of the steel works produced about 78,000 m³/h of raw coal gas. ZG0Z was supposed to receive about 40,000 m³/h of raw coal gas from this plant but actually received 15,000 to 18,000 m³/h. The remaining 60,000 to 63,000 m³/h of raw coal gas was mixed with blast furnace gas (also produced at the Lenin Steel Works) in a proportion of 3 m³ of blast furnace gas to 1 m³ of raw coal gas and was burned in the coke ovens, Martin furnaces, and soaking pits at the works.

The Lenin Steel Works was built in 1948 and was in good condition. The coke plant had 300 operational coke ovens, which burned 2200 tons of coal each 24 hours. Three hundred more coke ovens were under construction and were scheduled to be finished in 1965. The addition of these ovens was expected to increase the amount of raw coal gas produced at the plant by about 100 percent (156,000 m³/h) and the amount of gas going to ZG0Z to 50,000 m³/h. [redacted] the construction would be completed as planned. 50X1-HUM

[redacted] estimated the labor force of the Lenin Steel Works at about 18,000 workers, including about 150 armed civilian guards in special uniforms. 50X1-HUM

(m) Bierut Steel Works (See Annex C-17)

This steel works was in CZESTOCHOWA at coordinates N50-48, E19-10, and UTM CB-710305. It was under construction. [redacted] estimated the labor force of the Bierut Steel Works at about 8000 workers. This included about 150 armed civilian guards in special uniforms. 50X1-HUM

CONFIDENTIAL

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20

- (n) Pokoj Steel Works (See Annex C, Item J; Annex C-9, Item XXVIII; and Annex C-18)

This steel works was in NOWY BYTOM. A coke plant was an integral part of it. However, all the raw coal gas produced by this coke plant was used by the Pokoj Steel Works for its own needs (about 15,000 m³/h). It did, however, send blast furnace gas to the Walenty Coke Plant. This gas was mixed with raw coal gas at the Walenty Coke Plant (3 m³ blast furnace gas to 1 m³ of raw coal gas) and burned in its coke ovens to produce raw coal gas.

The Pokoj Steel Works was built before World War I and was in very poor condition. It used about 500 tons of coal each 24 hours in its coke ovens. The coal was received from the coal mines in Upper Silesia and was used to produce coke and raw coal gas.

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[] the labor force of the Pokoj Steel Works was about 10,000 workers. Included in this figure were about 150 armed civilian guards in special uniforms.

- (o) Florian Steel Works (See Annex C, Item K; Annex C-9, Item 8; and Annex C-19)

This steel works, which was built before World War I, was in SWIETOCHLOWICE. A coke plant was an integral part of it, and all the gas produced by the coke plant (about 16,000 m³/h) was used by the steel works for its own needs.

The Florian Steel Works used about 500 tons of coal each 24 hours. The coal was received from mines in Upper Silesia.

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[] estimated the labor force of the Florian Steel Works as about 4000 workers, including 30 armed civilian guards in special uniforms.

The steel works was in very poor condition.

- (p) Zygmunt Steel Works (See Annex C, Item L; and Annex C-5, Item 7)

This steel works was in BYTOM. It was actually a machine construction plant even though it was called a steel works. It produced parts for coal mine machines and cranes (type unknown). A coke plant, which used about 2000 tons of coal in its coke ovens each 24 hours, was an integral part of the steel works. It produced raw coal gas (28,000 m³/h), but it was all used by Zygmunt Steel Works.

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[] estimated the labor force of the steel works as about 2500 workers. Included in this figure were about 20 armed civilian guards in special uniforms.

The Zygmunt Steel Works was built before World War I and was in poor condition.

- (q) Orzegow Coke Plant (See Annex C, Item M; and Annex C-5, Item XX)

This coke plant was in ORZEGOW. It produced about 1000 m³/h of raw coal gas; 500 m³/h of this gas was used by the coke plant for its own needs and 500 m³/h was burned off as waste. The question did come up at one time about laying a pipeline to the coke plant so that ZGOZ could receive the extra gas, but the investments branch in ZGOZ, and the State Gas Inspection Department were in agreement that it would not be a good investment, because a compressor station would have to be built near the Orzegow Coke Plant, additional personnel would have to be hired to operate the compressor station, and a gas pipeline would have to be laid from the compressor station to where it would join the pipeline network. This would all require a lot of money, material, and time, and the return on the investment would not be great enough to warrant spending so much money.

CONFIDENTIAL

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The Orzegow Coke Plant used about 500 tons of coal each 24 hours to produce coke and raw coal gas.

(3) Compressor Stations (See Annexes C and E)

Most of the coke plants had a compressor station that was at the coke plant or close by. These compressor stations were subordinate to ZGOZ and not to the coke plants. In cases where there was no compressor station in or near the coke plant, the reason was that a combination compressor and purifying station existed near the coke plants and a separate compressor station was not needed. See Annex E for a list of the compressor stations subordinate to ZGOZ.

(a) Zaborze Compressor Station (See Annex C, Item 2; Annex C-1, Item II; and Annex C-2)

This compressor station was at the Zaborze Coke Plant. There were 10 people working in the station; 3 machinists, 3 machinist helpers, 3 gas-holder attendants, and the chief of the compressor station.

The compressor station had actually two functions; that of compressing raw coal gas, which was transported from its gas holder to Zaborze II Compressor and Purifying Station (see Annex C, Item 6; and Annex C-1, Item B) and distributing raw coal gas. The Zaborze Compressor Station had a gas holder that received raw coal gas from the Zaborze Coke Plant (see Annex C, Item A; and Annex C-1, Item I). Gas was transported from this gas holder through the compressors of the compressor station, and was transported, under about .6 atmospheres of working pressure, to the gas distributing junction at the Zaborze II Compressor and Purifying Station (see Annex C, Item 6; and Annex C-1, Item B). The distribution of raw coal gas from the Zaborze II Compressor and Purifying station will be covered later in this report.

The gas distribution junction at the Zaborze Compressor Station also received raw coal gas from the Makoszowy Coke Plant (see Annex C, Item B; and Annex C-3, Item VIII), Walenty Coke Plant (see Annex C, Item F; and Annex C-9, Item XXV), and the Gliwice Coke Plant (see Annex C, Item E; and Annex C-3, Item XIII). The gas distribution junction was a complex of pipeline connections and valves located underground near the Zaborze Compressor Station. The valves were operated by a machinist in a control room, which was in the same building with the compressor station. This machinist worked with two other machinists in shifts around the clock. Gas from the distribution junction went to four places: To the gas distribution junction at the Zaborze II Compressor and Purifying Station (see Annex C, Item 6); to the Zaborze Thermoelectric Station (see Annex C, Item 25; and Annex C-3, Item IX); to the gas holder at the Zaborze Compressor Station; and in rare cases to the gas distribution junction at the Zaborze I Compressor and Purifying Station (see Annex C, Item 4; and Annex C-1, Item A). The reason it was rarely sent to Zaborze I was because the normal gas flow was from the gas distribution junction at Zaborze I to the gas distribution junction at the Zaborze Compressor Station; however, in cases of need, the flow could be reversed.

The machinist on duty in the control room had a telephone that was connected to the ZGOZ telephone system. He used this telephone to contact the installations that received gas from this distribution junction. Thus he regulated the amount of gas going to each installation.

The gas distribution junction at the Zaborze Compressor Station could also receive raw coal gas from the Jadwiga Coke Plant (see Annex C, Item C; and Annex C-5, Item XXIII), and the Bobrek Steel Works (see Annex C, Item D; and Annex C-5, Item XXI), but this would happen only in case of emergency.

It is also important to note that only gas from the gas holder of the Zaborze Compressor Station went through the compressors of that compressor station. The rest of the gas received by the Zaborze Compressor Station was distributed only by the distribution junction of this station and did not go through the compressors.

CONFIDENTIAL

CONFIDENTIAL

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- (b) Walenty Compressor Station (See Annex C, Item 5; Annex C-9, Item XXVI; and Annex C-10)

This compressor station was at the Walenty Coke Plant. There were about 20 employees in the station; the chief, six machinists, six machinist helpers, three electricians, three laborers, and one janitor.

The station was responsible for receiving raw coal gas from the Walenty Coke Plant (see Annex C, Item F; and Annex C-9, Item XXV), and sending it under 1 to 2 atmospheres of working pressure to the distributing junctions of Zaborze Compressor Station and the Zabrze I Compressor and Purifying Station, and under 6 atmospheres of working pressure to the Pokoj, Zgoda, and Florian Steel Works (see Annex C, Items J, 8, and K; and Annex C-9, Items XXVIII, XXIX, and 8). One of the compressors used in this station was manufactured at the Szatkowski Machine Plant (Zaklady Mechaniczne im. Szatkowskiego) in KRAKOW. This plant was formerly known as the Zieleniewski Railroad Car Factory (Zieleniewski Fabryka Wagonow).

- (c) Makoszowy Compressor Station (See Annex C, Item 1; Annex C-3, Item VIII; and Annex C-4)

The Makoszowy Compressor Station was at the Makoszowy Coke Plant. Seventeen persons worked there; the chief, three machinists, six machinist helpers, three laborers, three electricians and one janitor.

The Makoszowy Compressor Station received raw coal gas from the Makoszowy Coke Plant (see Annex C, Item B; Annex C-3, Item VII; and Annex C-4) and sent it to the gas distribution junction at the Zaborze Compressor Station (see Annex C, Item 2; and Annex C-1, Item II)

- (d) Gliwice Compressor Station (See Annex C, Item 14; Annex C-3, Item XV; and Annex C-8)

The compressor station was at the Gliwice Coke Plant. There were 14 people employed there; the chief, three machinists, three machinist helpers, three laborers, three electricians, and one janitor.

The Gliwice Compressor Station received raw coal gas from the Gliwice Coke Plant (see Annex C, Item E; Annex C-3, Item XIII; and Annex C-8). Part of the gas was sent to the gas distribution junction at the Carbochemia Compressor and Purifying Station (see Annex C, Item 3; and Annex C-3, Item F), and the remainder was sent to the Szywald Raw Coal Gas Distribution Junction. (see Annex C, Item 15; and Annex C-3, Item XII), which was just a gas distribution junction, and not part of a compressor station or a compressor and purifying station. The gas distribution junction at the Carbochemia Compressor and Purifying Station usually sent the extra raw coal gas it received from the Gliwice Compressor Station to the gas distribution junction at the Zabrze I Compressor and Purifying Station, where some of it was purified and the rest of it was sent to the distribution junction at the Zaborze Compressor Station. In case of emergency, however, this system could be reversed and the distribution junction at the Carbochemia Compressor and Purifying Station could receive gas from the distribution junction at the Zaborze Compressor Station.

The Szywald Distribution Junction usually sent the gas it received from the Gliwice Compressor Station to the Knurów Compressor and Purifying Station (see Annex C, Item 13; and Annex C-3, Item E). The Knurów Compressor and Purifying Station usually purified all the gas for consumers of purified gas. However, in case of emergency, this station could send gas it received from the Knurów Coke Plant to the Szywald Raw Coal Gas Distributing Junction, and from there it could be sent to the Zabrze II Compressor and Purifying Station (see Annex C, Item 6; and Annex C-1, Item B) or to the Zabrze I Compressor and Purifying Station (see Annex C, Item 4; and Annex C-1, Item A).

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

23

There was also one gas exhauster in the Carbochemia Compressor and Purifying Station that received raw coal gas direct from the Gliwice Coke Plant. This gas exhauster compressed the gas and sent it to the Piotrowice Raw and Purified Coal Gas Distributing Junction (see Annex C, Item 16; and Annex C-22, Item 32). From there it was transported by pipeline to the gas distribution junction at the Zabrze II Compressor and Purifying Station.

- (e) Bobrek Compressor Station (See Annex C, Item 17; Annex C-5, Item XXII; and Annex C-7)

This compressor station was part of the Bobrek Steel Works. Ten persons worked in the station; three machinists, three machinist helpers, two laborers, one janitor, and the chief of the compressor station. The Bobrek Compressor Station received extra raw coal gas, when it was available, from the Bobrek Steel Works (see Annex C, Item D; and Annex C-5, Item XXI), and sent it to the gas distribution junction at the Zabrze II Compressor and Purifying Station.

- (f) Jadwiga Compressor Station (See Annex C, Item 18; Annex C-5, Item XXIV; and Annex C-6)

Fourteen persons worked in the station; the chief, three machinists, three machinist helpers, three electricians, three laborers, and one janitor.

The Jadwiga Compressor Station received raw coal gas from the Jadwiga Coke Plant (see Annex C, Item C; and Annex C-5, Item XXIII), and sent it to the gas distribution junction at the Zabrze II Compressor and Purifying Station.

- (g) Kosciuszko Compressor Station (See Annex C, Item 9; Annex C-5, Item XIX; and Annex C-11)

The Kosciuszko Compressor Station was near the Kosciuszko Steel Works. About 19 persons worked in the station; the chief, six machinists, three electricians, six laborers, and three gas-holder attendants.

The Kosciuszko Compressor Station had a gas holder that received raw coal gas from the Kosciuszko Steel Works (see Annex C, Item G; and Annex C-5, Item XVII). Gas was transported from the gas holder through the compressors of the compressor station, and was transported to the Konstal Coach Factory (Fabryka Wagonow Konstal W Chorzowie) (see Annex C, Item 11; and Annex C-5, Item XVIII), to the Batory Steel Works (see Annex C, Item 7; and Annex C-9, Item 31), and on Saturdays, Sundays and holidays to the Chorzow Thermoelectric Station (see Annex C, Item 10; and Annex C-5, Item XVI).

- (h) Debiensko Compressor Station (See Annex C, Item 12; and Annex C-13)

The station was 500 m from the Debiensko Coke Plant. Twenty-six persons worked in the station; the chief, three machinists, six machinist helpers, three electricians, three laborers, three firemen for the heating system, a four-man pipeline servicing crew, and three doormen.

There was a gas holder at the Debiensko Compressor Station that received raw coal gas from the Debiensko Coke Plant (see Annex C, Item I). Gas was transported from the gas holder through the compressors of the compressor station, and was transported to the Debiensko Thermoelectric Plant (see Annex C, Item 28), and to the Knurów Compressor and Purifying Station (see Annex C, Item 13; and Annex C-3, Item E).

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

24

(4) Raw Coal Gas Consumers

The raw coal gas consumers had three things in common: All raw coal gas consumers paid ZGOZ .25 zolty per m³ for the raw coal gas they received from ZGOZ. A reduction and measuring station was located at each consumer. The stations belonged to ZGOZ and were used to reduce the pressure of the gas so it could be used by the consumer, and to measure how much gas the consumer used so he could be billed for that amount by ZGOZ.

- (a) Pokoj Steel Works (See Annex C, Item J; Annex C-9, Item XXVIII; and Annex C-18)

The Pokoj Steel Works was in NOWY BYTOM. It was one of the largest steel works in Poland. The steel works had its own coke plant, which produced about 15,000 m³/h of raw coal gas, but this was not enough for its needs. For this reason it bought up to 20,000 m³/h of raw coal gas from ZGOZ. The gas came from the Walenty Coke Plant and was compressed by the Walenty Compressor Station located at the Walenty Coke Plant.

The Pokoj Steel Works also produced a large quantity of blast furnace gas (amount unknown): 30,000 to 50,000 m³/h of this gas was sent directly from the steel works to the Walenty Coke Plant. The Walenty Coke Plant and the Pokoj Steel Works settled between themselves on the payment for this gas, and no payment was made to ZGOZ because the gas was compressed by gas exhausters belonging to the Pokoj Steel Works and was transported by a pipeline owned by the Central Administration of the Metallurgical Industry, and ZGOZ had nothing to do with compressing or transporting the blast furnace gas.

The Pokoj Steel Works produced steel plates, I-beams, channels, pig iron, and sheet iron.

- (b) Zgoda Steel Works (See Annex C, Item 8; and Annex C-9, Item XXIX)

The Zgoda Steel Works was in NOWY BYTOM. It received about 5,000 m³/h of raw coal gas from ZGOZ. This gas came from the Walenty Coke Plant and was compressed by the Walenty Compressor Station at the Walenty Coke Plant. 50X1-HUM

even though this installation was called a steel works, it was actually a machine construction plant. It produced steam engines for ships up to 5000 tons and diesel engines for ships up to 10,000 tons. It also produced machines (type unknown) for coal mines and the metallurgical industry.

estimated the labor force of the Zgoda Steel Works 50X1-HUM about 1500 workers, including about 20 armed civilian guards in special uniform.

- (c) Florian Steel Works (See Annex C, Item K; Annex C-9, Item 8; and Annex C-19)

This steel works was in HAJDUKI-WIELKIE. It had a coke plant that produced about 7000 m³/h of raw coal gas, but this was not enough for its needs, so it bought about 12,000 m³/h of raw coal gas from ZGOZ. The gas was received from the Walenty Coke Plant and was compressed by the Walenty Compressor Station located at the Walenty Coke Plant. The amounts of raw coal gas were sometimes insufficient to meet the plant's needs, in which case ZGOZ supplied up to 4000 cubic meters per hour of purified coal gas.

The Florian Steel Works produced rolled steel, steel beams, and steel ingots. The steel ingots produced by this steel works were sent to the Batory Tube Rolling Mill (Huta Batory Walcownia Rur Mannes-Manowskich), which will be covered later in this report.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

25

- (d) Mikolaj Thermoelectric Station (See Annex C, Item 19; and Annex C-9, Item XXVII)

This thermoelectric station was in RUDA-SLASKA. It received about 2000 m³/h of raw coal gas from ZGOZ. The gas came from the Walenty Coke Plant and was compressed by the Walenty Compressor Station. The thermoelectric station could use up to 5000 m³/h of raw coal gas, but it normally received only about 2000 m³/h because it had a low priority in comparison with other recipients. The steam boilers in this thermoelectric station were able to burn coal or coal and gas together, and the station met its needs by burning more coal when insufficient amounts of raw coal gas were received.

Most of the electric energy produced by the Mikolaj Thermoelectric Station (amount unknown) went into the high-tension network for that area, and the rest was used by the Walenty Compressor Station and the Walenty Coke Plant.

- (e) Batory Steel Works (See Annex C, Item 7; Annex C-9, Item 31; and Annex C-20)

This steel works was in HAJDUKI WIELKIE. It produced about 50,000 m³/h of generator gas, but that was not enough for its needs, so it bought about 15,000 m³/h of raw coal gas from ZGOZ. The gas came from the Kosciuszko Steel Works, and was compressed by the Kosciuszko Compressor Station.

The Batory Steel Works produced water pipes, gas pipes, oil pipes, steam pipes (80 to 150 mm), sheet-metal plates for steam engines, sheet iron for transformers, sheet tin for tin cans and caterpillar tracks for tanks constructed at the Labendy Steel Works. It produced 55,000 tons of pipes in 1958. ZGOZ received its 300 mm to 500 mm (internal diameter) pipeline sections from this steel works. The steel works did not have any blast furnaces, only Martin open-hearth furnaces.

- (f) Konstal Coach Factory (See Annex C, Item 11; and Annex C-5, Item XVIII)

This factory was in CHORZOW. It received about 5000 m³/h from ZGOZ. The gas came from the Kosciuszko Coke Plant and was compressed by the Kosciuszko Compressor Station.

The Konstal Coach Factory produced streetcar parts, springs for railroad cars, prefabricated steel parts for railroad and highway bridges, prefabricated steel parts for airplane hangars, and steel plates for MAN gas holders (quantities unknown).

- (g) Chorzow Thermoelectric Station (See Annex C, Item 10; and Annex C-5, Item XVI)

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This thermoelectric station was in CHORZOW. It had two steam boilers, built in 1958, that could burn gas or coal. [] the thermoelectric station was supposed to start receiving about 15,000 m³/h of raw coal gas from ZGOZ in autumn 1959 on Saturdays, Sundays and holidays.

The electric energy produced by the thermoelectric station was supposed to go into the high-tension network of that area.

- (h) Pstrowski Thermoelectric Plant (See Annex C, Item 20; and Annex C-5, Item XXX)

The Pstrowski Thermoelectric Plant was part of the Pstrowski Coal Mine in ZABRZE. It received up to 10,000 m³/h of raw coal gas on Saturdays, Sundays and holidays. The gas was received from the Jadwiga Coke Plant and was compressed by the Jadwiga Compressor Station.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

26



The boilers in the Pstrowski Thermoelectric Plant burned gas and coal together. The electric energy produced by the plant was used by the Pstrowski Coal Mine, the Jadwiga Coke Plant and the Jadwiga Compressor Station. Whenever there was more electric energy than needed by these installations, it went into the high-tension network of that area.

- (i) Concordia Coke Plant (See Annex C, Item 21; and Annex C-1, Item III)

The Concordia Coke Plant was in ZABRZE. It received about 6000 m³/h of raw coal gas from ZGOZ. The gas was received from the gas distribution junction at the Zabrze II Compressor and Purifying Station.

The Concordia Coke Plant produced electrode cokes, which were sent to the Plania Carbon Electrode Factory (Fabryka Elektrod Węglowych "Plania") in RACIBORZ. They were used to produce carbon electrodes (quantity unknown).

- (j) CDS Central Distillation of Coal Tar Plant (Centralna Dystylacja Smoly-CDS) (See Annex C, Item 22; and Annex C-1, Item IV)

This plant was in ZABRZE. It received about 1000 m³/h of raw coal gas from ZGOZ via the gas distribution junction at the Zabrze II Compressor and Purifying Station.


The plant was engaged in distilling coal tar, which was then sent to the Concordia Coke Plant, where it was used to produce electrode cokes.

The CDS also received about 20 types of oil through the distillation of coal tar, which was sent to various chemical plants (names unknown). The rinse-type oil was sent to coke plants, where it was used to extract benzol from raw coal gas.

- (k) Zabrze Steel Works (See Annex C, Item 23; and Annex C-1, Item V)

This steel works was in ZABRZE. It received about 5000 m³/h of raw coal gas from ZGOZ via the gas distribution junction at the Zabrze II Compressor and Purifying Station.

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 even though it was called a steel works, it was actually a cast iron foundry because it was engaged mostly in the production of pig iron parts for machines. But this steel works also produced steel beams that were used in the construction of highway bridges, railroad bridges, and industrial buildings.

- (l) Zabrze Glass and Glass Wool Works (Huta Szkła i Waty Szklanej Zabrze) (See Annex C, Item 24; and Annex C-1, Item VI)

This glass and glass wool works was in ZABRZE. It received about 4000 m³/h of raw coal gas from ZGOZ via the gas distribution junction at the Zabrze I Compressor and Purifying Station.

The Zabrze Glass and Glass Wool Works produced all types of bottles and glass wool, which was used as an insulating material.

- (m) Zabrze Thermoelectric Station (See Annex C, Item 25; and Annex C-3, Item IX)

This thermoelectric station was on ulica Wolności in ZABRZE. It received about 1000 m³/h of raw coal gas during the week, and up to 25,000 m³/h of raw coal gas on Saturdays, Sundays, and holidays. Its boilers could burn either gas or coal. The electric energy produced by the station went into the high-tension network of that area.

 it produced about 300 megawatts of electric energy.

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- (n) Gliwice Thermoelectric Plant (See Annex C, Item 26; and Annex C-3, Item XIV)

This plant was part of the Gliwice Coal Mine. It received up to 5000 m³/h of raw coal gas from the Gliwice Coke Plant on Saturdays, Sundays and holidays. The boilers in the thermoelectric plant could burn gas and coal together. The electric energy produced by the thermoelectric plant was used by the Gliwice Coal Mine, the Gliwice Coke Plant, and the Gliwice Compressor Station.

- (o) Knurów Thermoelectric Plant (See Annex C, Item 27; and Annex C-3, Item XI)

This plant was part of the Knurów Coal Mine. It received up to 5000 m³/h of raw coal gas from the Knurów Coke Plant on Saturdays, Sundays and holidays. The boilers in the thermoelectric plant could burn either gas or coal. The plant produced electric energy for the Knurów Coal Mine, the Knurów Coke Plant, and the Knurów Compressor and Purifying Station.

- (p) Debiensko Thermoelectric Plant (See Annex C, Item 28)

This plant was part of the Debiensko Coal Mine. It received about 1000 m³/h of raw coal gas from the Debiensko Coke Plant during the week and up to 4000 m³/h of raw coal gas on Saturdays, Sundays and holidays. The boilers in the thermoelectric plant could burn gas with coal. The electric energy produced by the thermoelectric plant was used in the Debiensko Coal Mine, the Debiensko Coke Plant, and the Debiensko Compressor Station.

- (q) Marcel Thermoelectric Station

The Marcel Thermoelectric Station was part of the Marcel Coal Mine, which was located immediately south, adjoining the Emma Coke Plant (CA-190479). The thermoelectric station received about 1000 m³/h of raw coal gas during the week, and up to 8000 m³/h of raw coal gas on Saturdays, Sundays and holidays. The plant had two boilers. One could burn gas with coal, and the other could burn gas or coal. The electric energy produced by the plant went to the Marcel Coal Mine, the Emma Coke Plant and the Radlin Compressor and Purifying Station.

- (r) Lenin Thermoelectric Plant⁹

This plant was part of the Lenin Steel Works (DA-351477). It received 2000 m³/h of raw coal gas from ZGOZ during the week and up to 20,000 m³/h of raw coal gas on Saturdays, Sundays and holidays. The gas was sent directly from the coke plant at the Lenin Steel Works to the thermoelectric plant. The boilers in the plant could burn either gas or coal.

- (s) Zdziechowice Thermoelectric Station

This station was part of the Zdziechowice Coke Plant (BA-975889). It received about 4000 cu m per hour of raw coal gas on Saturdays, Sundays and holidays. The boilers in the station burned gas with coal. The station produced electric energy for the Zdziechowice Coke Plant, and the Zdziechowice Compressor and Purifying Station.

- (5) Raw Coal Gas Pipelines of the Zabrze District.

There were several features that raw coal gas pipelines had in common: They were made of steel and had a 25-year life expectancy; the diameter given is the internal diameter; the preservative on them was asphalt and Kraft paper; and they were used to transport raw coal gas.

- (a) Raw Coal Gas Pipeline from Item 1 to Item 2, Annex C. (Also see Annex C-3, Item VII; and Annex C-1, Item II)

This pipeline transported raw coal gas from the Makoszowy Compressor

CONFIDENTIAL

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sor Station to the raw coal gas distributing junction at the Zaborze Compressor Station. The pipeline, which was about 4 kilometers long, 300 mm in diameter, 7½ mm thick, and designed to operate under three atmospheres of working pressure, actually operated under about 2½ atmospheres of pressure, and the pipeline sections were connected with sleeve-type joints. The line had been laid in 1923 by the Germans and, although it had passed its life expectancy, it was in good working condition.

- (b) Raw Coal Gas Pipeline from Item 3 to Item 4, Annex C. (Also see Annex C-3, Item F; and Annex C-1, Item A)

This pipeline transported raw coal gas from the raw coal gas distributing junction at the Carbochemia Compressor and Purifying Station to the raw and purified coal gas distribution junction at the Zabrze I Compressor and Purifying Station. The raw coal gas transported by the pipeline was produced by the Gliwice Coke Plant and sent to the Gliwice Compressor Station, where it was compressed and transported to the raw coal gas distributing junction at the Carbochemia Compressor and Purifying Station. The pipeline was about 7 kilometers long, 300 mm in diameter, and 7½ mm thick. It was designed to operate under 6 atmospheres of working pressure, but actually worked under 8 to 3 atmospheres of pressure, and the pipeline sections were connected with sleeve-type joints.

The pipeline was laid in 1925 by the Germans. It had already passed its life expectancy and was in very poor condition. it was always being repaired.

50X1-HUM

- (c) Raw Coal Gas Pipeline from Item 4 to Item 2, (Also see Annex C-1, Items A and II)

Raw coal gas was transported through this pipeline from the raw and purified gas distributing junction at the Zabrze I Compressor and Purifying Station to the raw coal gas distributing junction at the Zaborze Compressor Station. This was not a large quantity of gas but only extra gas that Zabrze I Compressor and Purifying Station was unable to purify. The pipeline was 2 kilometers long, 400 mm in diameter, and 10½ mm thick. It was designed to operate under 3 atmospheres of working pressure but actually worked under about 1 atmosphere of pressure. The pipeline sections had Kulisto-Kielichowe type joints.

The pipeline was laid before World War II by the Germans and was in poor condition.

- (d) Raw Coal Gas Pipeline from Item 5 to Item 2, Annex C. (Also see Annex C-9, Item XXVI; and Annex C-1, Item II)

This was a raw coal gas pipeline from the Walenty Compressor Station to the raw coal gas distribution junction at the Zaborze Compressor Station. It was 4 kilometers long, 600 mm in diameter, 10 mm thick, designed to operate under 3 atmospheres of working pressure but actually worked under 1 to 2 atmospheres of pressure. The pipeline sections were connected by Kulisto-Kielichowe joints. Part of the pipeline was laid during World War II by the Germans (up to branch line), and the remaining portion was laid by ZGOZ in 1945.

The pipeline transported only a small quantity of raw coal gas to the raw coal gas distributing junction at the Zaborze Coke Plant. Most of the gas was transported by a branch line to the raw and coal gas distributing junction at the Zabrze II Compressor and Purifying Station, and only the extra gas that it could not handle went to the raw coal gas distributing junction at the Zaborze Compressor Station.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

29

Branch Line to Item 6, Annex C. (Also see Item B, Annex C-1)

This branch line, which was laid by the Germans during World War II, was about ¹/₃ kilometer long, 600 mm in diameter, 10 mm thick, designed to work under 3 atmospheres of pressure, but actually worked under 1 to 2 atmospheres of pressure. The pipeline sections were joined by Kulisto-Kielichowe joints. The line joined one of the pipelines coming from the Zaborze Compressor Station to the Zabrze II Compressor and Purifying Station (see Annex C, Items 2 and 6; Annex C-1, Items II and B).

- (e) Two Raw Coal Gas Pipelines from Item 2 to Item 6, Annex C.
(Also see Annex C-1, Items B and II)

Both these pipelines were one kilometer long, 600 mm in diameter, 9 mm thick, were designed to operate under 3 atmospheres of working pressure, but actually worked under about 1 atmosphere of pressure, and both were laid by the Germans during World War II.

The pipeline on the right was used to transport raw coal gas from the raw coal gas distributing junction at the Zaborze II Compressor Station to the raw and purified gas distributing junction at the Zabrze II Compressor and Purifying Station, or, in case of emergency, from Item 6 to Item 2.

The pipeline on the left was used to transport raw coal gas from the compressors of the Zaborze Compressor Station to the raw and purified gas distributing junction at the Zabrze II Compressor and Purifying Station.

- (f) Raw Coal Gas Pipeline from Item 5 to Item 7, Annex C.
(Also see Annex C-9, Items XXVI and 31)

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The over-all length of this pipeline was 7 km. It ran from the Walenty Compressor Station to the Batory Steel Works. There were 3 small branch lines from this pipeline to the Pokoj, Zgoda, and Florian Steel Works. There was a valve in the pipeline just before the Batory Steel Works. It was normally closed but could be opened in case of emergency. [] if something went wrong at the Walenty Coke Plant, this valve could be opened and the Pokoj, Zgoda, and Florian Steel Works could receive raw coal gas from the Kosciuszko Steel Works (see Annex C, Item G; and Annex C-5, Item XVII) that was compressed by the Kosciuszko Compressor Station (see Annex C, Item 9; and Annex C-5, Item XIX).

This pipeline was not all laid at one time; although it was one line, it had varying diameters and thicknesses.

1. Section of Pipeline from Item 5 to Item J, Annex C.
(Also see Annex C-9, Items XXVI and XXVIII)

This portion of the pipeline was from the Walenty Compressor Station to the Pokoj Steel Works. It was 2 km long, 600 mm in diameter, 10 mm thick, and was designed to operate under 3 atmospheres of working pressure but actually operated under .6 atmospheres of pressure. It had Kulisto-Kielichowe type joints. It was laid in 1941 by the Germans and, although it had already passed its life expectancy, was in good condition.

2. Section of Pipeline from Item J to Item 8, Annex C.
(Also see Annex C-9, Items XXVIII and XXIX)

This portion of the pipeline was from the Pokoj Steel Works to the Zgoda Steel Works. It was $1\frac{1}{2}$ km long, 500 mm in diameter, $11\frac{1}{2}$ mm thick, was designed to operate under 3 atmospheres of working pressure, but actually operated under about .6 atmospheres of pressure. It had Kulisto-Kielichowe type joints. It was laid in 1942 by the Germans, and, even though it had passed its life expectancy, was in good condition.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

30

3. Section of Pipeline from Item 8 to Item K, Annex C.
(Also see Annex C-9, Items XXIX and 8)

This portion of the pipeline was from the Zgoda Steel Works to the Florian Steel Works. It was 1 km long, 350 mm in diameter, $8\frac{1}{2}$ mm thick, was designed to operate under 3 atmospheres of working pressure, but actually worked under about .6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1956 by Gazobudowa and was in good condition.

4. Section of Pipeline from Item K to Item 7, Annex C.
(Also see Annex C-9, Items 8 and 31)

This portion of the pipeline was from the Florian Steel Works to the Batory Steel Works. It was $2\frac{1}{2}$ km long, 350 mm in diameter, $8\frac{1}{2}$ mm thick, and was designed to operate under 3 atmospheres of working pressure, but actually operated under about .6 atmospheres of pressure. It had Kulisto-Kielichowe type joints and, although laid before World War II, it was in good condition. This portion of the pipeline was used only in case of emergency.

- (g) Raw Coal Gas Pipeline from Item 9 to Item 7, Annex C.
(Also see Annex C-5, Item XIX; and Annex C-9, Item 31)

This pipeline transported raw coal gas from the Kosciuszko Compressor Station to the Batory Steel Works. The gas transported by this pipeline was produced by the Kosciuszko Coke Plant and compressed at the Kosciuszko Compressor Station. This pipeline was about 3 km long, 350 mm in diameter, 9 mm thick, was constructed to operate under 6 atmospheres of working pressure, but actually worked under about 3 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1956 by Gazobudowa and was in good condition.

- (h) Raw Coal Gas Pipeline from Item 9 to Item 10, Annex C.
(Also see Annex C-5, Items XIX and XVI)

This pipeline transported raw coal gas from the Kosciuszko Compressor Station to the Chorzow Thermoelectric Station. The raw coal gas transported by this pipeline was produced by the Kosciuszko Coke Plant and compressed at the Kosciuszko Compressor Station. The pipeline was 2 km long, 500 mm in diameter, $11\frac{1}{2}$ mm thick, was designed to operate under 3 atmospheres of working pressure, but actually worked under about .4 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1947 by Gazobudowa and was in good condition.

- (i) Raw Coal Gas Pipeline from Item 9 to Item 11, Annex C.
(Also see Annex C-5, Items XIX and XVIII)

This was a very short pipeline (approximately 400 m long), and is not shown in Annex C. It transported raw coal gas from the Kosciuszko Compressor Station to the Konstal Coach Factory. It was 300 mm in diameter, $7\frac{1}{2}$ mm thick, was constructed to operate under 3 atmospheres of working pressure, but actually worked under about .4 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1955 by Gazobudowa and was in good condition.

- (j) Raw Coal Gas Pipeline from Item I to Item 12, Annex C.

This pipeline transported raw coal gas from the Debiensko Coke Plant to the Debiensko Compressor Station to be compressed. It was 500 m long, 600 mm in diameter, was designed to operate under 1 atmosphere of working pressure, but actually operated under about .5 atmospheres of pressure, and had butt joints that were butt welded. The pipeline laid in 1954 by Gazobudowa was in good condition.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

31

- (k) Raw Coal Gas Pipeline from Item 12 to Item 13, Annex C.
(Also see Annex C-3, Item E)

This pipeline transported raw coal gas from the Debienko Coke Plant, mixed with a small quantity of purified coal gas received from the Radlin Compressor and Purifying Station, to the Knurów Compressor and Purifying Station.

The pipeline was $5\frac{1}{2}$ km long, 350 mm in diameter, 9 mm thick, was designed to operate under 6 atmospheres of working pressure, actually worked under $3\frac{1}{2}$ atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1954 by Gazbudowa and was in good condition.

- (l) Raw Coal Gas Pipeline from Item 14 to Item 15, Annex C.
(Also see Annex C-3, Items XV and XII)

This pipeline transported raw coal gas from the Gliwice Compressor Station to the Szywałd Raw and Coal Gas Distribution Junction. The raw coal gas transported by this pipeline was produced by the Gliwice Coke Plant and compressed by the Gliwice Compressor Station. The pipeline was $2\frac{1}{2}$ km long, 400 mm in diameter, 10 mm thick, was designed to operate under 6 atmospheres of working pressure, actually worked under about 3 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1942 by the Germans and was in good condition.

- (m) Raw Coal Gas Pipeline from Item 15 to Item 13, Annex C.
(Also see Annex C-3, Items XII and E)

This pipeline transported raw coal gas from the Szywałd Raw Coal Gas Distributing Junction to the Knurów Compressor and Purifying Station. It was 4 km long, 250 mm in diameter, $6\frac{1}{2}$ mm thick, was designed to operate under 6 atmospheres of working pressure, actually worked under 3 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1947 by ZGOZ and was in good condition.

- (n) Raw Coal Gas Pipeline from Item 15 to Pipeline Connection above Item 26, Annex C. (Also see Annex C-3, Item XII)

This was another raw coal gas pipeline from the Szywałd Raw Coal Gas Distributing Junction. Just north of the Gliwice Thermoelectric Plant (Item 26, Annex C), it joined the raw coal gas pipeline which ran from the raw coal gas distributing junction at the Carbochemia Compressor and Purifying Station (see Annex C, Item 3; and Annex C-3, Item F), to the Piotrowice Raw and Purified Coal Gas Distributing Junction (see Annex C, Item 16; and Annex C-22, Item 32).

This pipeline was used only when the Knurów Compressor and Purifying Station could not handle all the gas received by the Szywałd Raw Coal Gas Distributing Junction and part of it had to be sent to the Zabrze II Compressor and Purifying Station. The route of this gas was from the Szywałd Raw Coal Gas Distributing Junction, to the Piotrowice Raw and Purified Coal Gas Distributing Junction, to the Zabrze II Compressor and Purifying Station (see Annex C, Item 6; and Annex C-1, Item B).

The pipeline was $3\frac{1}{2}$ km long, 250 mm in diameter, $6\frac{1}{2}$ mm thick, was designed to operate under 6 atmospheres of working pressure, actually operated under 3 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1947 by ZGOZ and was in good condition.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

32

- (o) Raw Coal Gas Pipeline from Item E to Item 3, Annex C.
(Also see Annex C-3, Items XIII and F)

This pipeline transported raw coal gas from the Gliwice Coke Plant to the Carbochemia Compressor and Purifying Station. Most of this gas was purified and the rest was sent to the Zabrze II Compressor and Purifying Station through the Piotrowice Raw and Purified Coal Gas Distributing Junction.

The pipeline was 400 m long, 400 mm in diameter, 10 mm thick, was designed to operate under 1 atmosphere of working pressure, actually operated under about .8 atmospheres of pressure, and had butt type joints that were butt welded. It was laid in 1930 by the Germans and was old but in good condition.

There was also an additional very short branch off this line to the Gliwice Compressor Station. It transported additional raw coal gas to the Gliwice Compressor Station whenever needed.

- (p) Raw Coal Gas Pipeline from Item 3 to Item 16, Annex C.
(Also see Annex C-3, Item F; Annex C-21; and Annex C-22, Item 32)

This pipeline transported raw coal gas from the raw coal gas distribution junction at the Carbochemia Compressor and Purifying Station, together with the raw coal gas coming from the Szywald Raw Coal Gas Distributing Junction, to the Piotrowice Raw and Purified Coal Gas Distributing Junction.

The pipeline was 5½ km long, 400 mm in diameter, 9 mm thick, designed to operate under 25 atmospheres of working pressure, but actually operated under .8 to 3 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1942 by the Germans and was in good condition.

- (q) Raw Coal Gas Pipeline from Item 16 to Item 6, Annex C.
(Also see Annex C-22, Item 32; and Annex C-1, Item B)

This pipeline transported raw coal gas from Piotrowice Raw and Purified Coal Gas Distributing Junction to the raw and purified coal gas distributing junction at the Zabrze II Compressor and Purifying Station. The pipeline was 9 km long, 500 mm in diameter, 11½ mm thick, was designed to operate under 6 atmospheres of working pressure, but actually operated under 3 atmospheres of pressure, and had sleeve-type connections.

The pipeline was laid in 1948 by ZGOZ, but the pipeline sections were old and had been used elsewhere before. [] this pipeline was in fair condition.

50X1-HUM

- (r) Raw Coal Gas Pipeline from Item 17 to Item 6, Annex C.
(Also see Annex C-5, Item XXII; and Annex C-1, Item B)

The pipeline was from the Bobrek Compressor Station to the raw and purified coal gas distributing junction at the Zabrze II Compressor and Purifying Station. There was one short branch line from this pipeline to the Jadwiga Compressor Station, but it was very short and is not shown in Annex C. The pipeline usually transported raw coal gas from the Bobrek Steel Works and the Jadwiga Coke Plant to the raw and purified coal gas distributing junction at the Zabrze II Compressor and Purifying Station. But on many occasions, the Bobrek Steel Works received raw coal gas through this pipeline. It was about 6 km long, 600 mm in diameter, 10 mm thick, designed to operate under 6 atmospheres of working pressure, but actually operated under about .8 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was constructed in 1941 by the Germans and was in good condition.

CONFIDENTIAL

CONFIDENTIAL

33

- (s) Raw Coal Gas Pipeline from the Emma Coke Plant to the Radlin Compressor and Purifying Station (See Annex C-14)

The pipeline transported raw coal gas from the Emma Coke Plant to the Radlin Compressor and Purifying Station. Its course is not shown in the annexes. It was 300 m long, 500 mm in diameter, 8 mm thick, designed to operate under .15 atmospheres of working pressure, but actually operated under about .05 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid by Gazobudowa in 1955, and was in good condition. It is not shown in the annexes because it was not part of the raw coal gas pipeline network.

- (t) Raw Coal Gas Pipeline from the Lenin Steel Works to the Krakow Compressor and Purifying Station (See Annex C-16)

This pipeline transported raw coal gas from the Lenin Steel Works to the Krakow Compressor and Purifying Station. It was 1 km long, 800 mm in diameter, 8 mm thick, and was designed to operate under about .4 atmospheres of working pressure, but actually operated under .15 atmospheres of pressure. The pipeline had butt joints that were butt welded, and all of it was constructed above the ground by the State Enterprise for the Construction of the Lenin Steel Works (Panstwowe Przedsiębiorstwo Budowy Huta Lenina) in 1957. It was in good condition. The pipeline also was not part of the raw coal gas pipeline network and therefore not shown in the annexes.

(6) Blast Furnace Gas Pipelines

Blast furnace gas pipelines were the responsibility of the Central Administration of the Metallurgical Industry, and ZGOZ had nothing to do with their construction, operation and maintenance, or the sale of blast furnace gas.⁷

- (a) Blast Furnace Gas Pipeline from Item J to Item F, Annex C (Also see Annex C-9, Items XXVIII and XXV)

This pipeline transported blast furnace gas from the Pokoj Steel Works to the Walenty Coke Plant. The pipeline was 2 km long, 1200 mm in diameter, 12 mm thick, and was constructed to work under .8 atmospheres of working pressure, but actually operated under about .5 atmospheres of pressure. It was supported above ground by 10-to 12-meter-high towers, and had butt joints that were butt welded.

This pipeline was constructed in 1952 by the Montako State Enterprise for Assembling Boilers and Steel Construction Work ("Montako" Panstwowe Przedsiębiorstwo Montazu Kotlow i Konstrukcji Stalowych), located in BEDZIN. It was in good condition.

e. Zabrze District Purified Coal Gas Pipeline System

(1) Background

There were eight compressor and purifying stations in the Zabrze District. Seven of them were operational and one was under construction. The seven were capable of purifying a total of 157,000 m³/h of raw coal gas, but actually they purified about 100,000 m³/h because of the lack of gas.

The figure on the quantity of gas which consumers of purified gas received was based on how much they asked for and not on how much they actually received. Sometimes they received what they asked for and sometimes they received a little less.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

54

(2) Compressor and Purifying Stations (See Part 1 of Annex D, and Annex E)

Compressor and purifying stations were responsible for removing hydrogen sulfide (H₂S) from raw coal gas and for compressing it so it could be transported by high-pressure pipelines to consumers.

(a) Zabrze I Compressor and Purifying Station (See Part 1 of Annex D, Item A; Annex C-1, Item A; and Annex C-23)

The Zabrze I Compressor and Purifying Station was at ulica Stalmacha in ZABRZE. It purified up to 6000 m³/h of raw coal gas and could receive an additional 1000 to 5000 m³/h of purified coal gas from the Zabrze II Compressor and Purifying Station if it had to distribute more. About 177 people were working at the station as follows:

3 doormen	20 workers in the workshop
4 machinists	2 carpenters
8 machinist helpers	8 persons who took care of the low-pressure pipeline in ZABRZE.
5 electricians	9-man emergency crew on 24-hour call
3 gas-holder attendants	40-man maintenance crew
2 chemists	20-man trap servicing crew
3 steam-boiler firemen	25 administrative personnel
3 firemen helpers	10 technical engineers
3 supply men	
8 workers in the purifying station	

(b) Zabrze II Compressor and Purifying Station (See Part 1 of Annex D, Item B; Annex C-1, Item B; and Annex C-24)

This compressor and purifying station, which was at ulica Mikulczyńska 15 in ZABRZE, purified up to 50,000 m³/h of raw coal gas. It also received a small quantity of purified gas from the Zdzeszowice Compressor and Purifying Station (see Part 1 of Annex D, Item C) through the Piotrowice Raw and Purified Coal Gas Distributing Junction (see Part 1 of Annex D, Item 32; and Annex C-22, Item 32), and could receive raw or purified coal gas from the Knurów Compressor and Purifying Station in case of emergency. There were about 125 people working at the Zabrze II Compressor and Purifying Station:

3 doormen	3 supply men
6 machinists	12 persons in the workshop
12 machinist helpers	1 carpenter
20 workers in the purifying station	16-man maintenance crew
6 electricians	30-man trap servicing crew
3 gas-holder attendants	6 engineers
4 chemists	3 administrative personnel

(c) Zdzeszowice Compressor and Purifying Station (See Annex D, Item C; and Annex C-15)

The Zdzeszowice Compressor and Purifying Station was at the Zdzeszowice Coke Plant but was subordinate to ZGOZ. The station could purify up to 15,000 m³/h of raw coal gas using the Bischoff dry purifying method. But there were four more purifiers under construction, which would increase the amount of gas this station could purify to 30,000 m³/h. They were also the Bischoff dry type and were supposed to be finished in 1960.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

35

A gas holder was also under construction at the station, and it was scheduled to be finished in 1960. Its purpose was to receive the purified gas after it had gone through the purifiers; the gas was then to go from the gas holder to the high-pressure compressors of the compressor station, instead of from the purifying station directly to the high-pressure compressors.

There were 31 people working in the Zdzieszwice Compressor and Purifying Station:

1 chief	3 doormen
3 machinists	3 engineers
6 machinist helpers	1 chemist
5 persons in the purifying station	1 administrative worker
2 blacksmiths	3-man trap servicing crew
2 blacksmith helpers	1 janitor

(d) Radlin Compressor and Purifying Station (See Annex D, Item D; and Annex C-14)

This compressor and purifying station was next door to the Emma Coke Plant, but was subordinate to ZGOZ.

It received raw coal gas from the Emma Coke Plant, and was capable of purifying 15,000 m³/h of the gas by the Bischoff dry-purifying method. It was also able to receive natural gas from ZGOZ in case of emergency and to mix it with purified coal gas. [] this mixture consisted of 5 m³ of purified coal gas to 1 m³ of natural gas.

50X1-HUM

Twenty-seven persons worked in the Radlin Compressor and Purifying Station:

1 chief	1 blacksmith helper
3 machinists	3 doormen
3 machinist helpers	1 chemist
3 electricians	3-mantrap servicing crew
3 workers in the purifying station	1 administrative worker
3 engineers	1 janitor
1 blacksmith	

(e) Knurów Compressor and Purifying Station (See Part 1 of Annex D, Item E; Annex C-3, Item E; and Annex C-12)

This compressor and purifying station was at the Knurów Coke Plant, and it was capable of purifying 26,000 m³/h of raw coal gas. Fifty-three persons worked there:

1 chief	4 blacksmith helpers
6 machinists	3 doormen
3 machinist helpers	1 chemist
3 electricians	6-mantrap servicing crew
15 workers in the purifying station	1 administrative worker
3 engineers	3 janitors
4 blacksmiths	

(f) Carbochemia Compressor and Purifying Station (See Part 1 of Annex D, Item F; Annex C-3, Item F; and Annex C-8)

The Carbochemia Compressor and Purifying Station was about 800 meters to the northeast of the Gliwice Coke Plant on ulica Pszczynska in GLIWICE. The

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

36



station was capable of purifying 5000 to 6000 m³/h of raw coal gas. All the gas purified by it was sold to the Carbochemia Activated Carbon Black Factory (Fabryka Sadzy "Carbochemia") of which the Carbochemia Compressor and Purifying Station was a part. The station was very small, and almost all of the work was done by hand. Whenever repairs were necessary, the Zabrze I Compressor and Purifying Station had to send its personnel to do them because the Carbochemia Compressor and Purifying Station did not have the necessary repairmen. There were 11 people working at this station:

1 chief	3 machinists
6 machinist helpers	1 laborer

- (g) Krakow Compressor and Purifying Station (See Part 1 of Annex D, Item G; and Annex C-16)


This station was located at the Lenin Steel Works, and was capable of purifying 50,000 m³/h of raw coal gas.

The system of purifying gas at this station was different from the system used at the other compressor and purifying stations. To begin with, the Lenin Steel Works itself removed 95 percent of the hydrogen sulfide from the raw coal gas, by the English Taylox wet method before it left the steel works. The remaining 5 percent of hydrogen sulfide was removed at the Krakow Compressor and Purifying Station by the Bischoff dry method; other stations, however, were required to remove 100 percent of the hydrogen sulfide.

There were also two systems for removing naphthalene from the gas. The Lenin Steel Works removed about 60 percent of the naphthalene in the gas, using gas scrub towers. The Krakow Compressor and Purifying Station removed about 39 percent of the remaining 40 percent, using the German Lurgi method. Both methods for removing naphthalene and hydrogen sulfide were good but very costly.

- (h) Czestochowa Compressor and Purifying Station (See Annex D, Item H; and Annex C-17)

50X1-HUM

The station which was located at the Bierut Steel Works was under construction  and was scheduled to be finished in September 1960. When it was finished, it was supposed to be able to purify 50,000 m³/h of raw coal gas. However, when it first begins operation in September 1960, it will receive only 15,000 m³/h of raw coal gas from the Bierut Steel Works because not all the coke ovens at the Bierut Steel Works will be finished. When the Bierut Steel Works is in full operation in 1965, the Czestochowa Compressor and Purifying Station is scheduled to receive 30,000 m³/h of raw coal gas. This will be only 3/5 of the station's capacity, but it was designed to handle an additional 20,000 m³/h of gas in case of emergency.

The compressors of this station will not only compress the gas received from the Bierut Steel Works, but will recompress gas received from the Zabrze II, and Krakow Compressor and Purifying Stations, that had not been used by consumers along the trunk line.

- (3) Purified Coal Gas Pipelines and Installations of the Zabrze District (See Part 1 of Annex D)

The purified coal gas pipelines had the same things in common as the raw coal gas pipelines except they were used to transport purified coal gas.

- (a) Trunk Line from Item A to Item 1, Part 1 of Annex D. (Also see Annex C-1, Item A; and Annex C-3, Item 1)

This trunk line transported purified coal gas from the Zabrze I

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

31

Compressor and Purifying Station to the Gliwice Distributing Station. It was 7 km long, 250 mm in diameter, 6½ mm thick, was designed to operate under 6 atmospheres of working pressure, but actually operated under about 2 atmospheres of pressure, and had sleeve-type connections. It was laid in 1933 by the Germans, and was in good condition.

The Gliwice Distributing Station was on ulica Na Piasku in GLIWICE. It received about 4000 m³/h of purified coal gas from the Zabrze I Compressor and Purifying Station. About 1500 m³/h of the gas went from the Gliwice Distributing Station to the nearby Gliwice Steel Works and about 2500 m³/h went to GLIWICE, where it was used in homes and small industries.

- (b) Trunk Line from Item A to Item 2, Part 1 of Annex D. (Also see Annex C-1, Item A; Annex C-5; and Annex C-9, Item 2)

This trunk line extended from the Zabrze I Compressor and Purifying Station to the Swietochlowice Compressor and Distributing Station, shown to the east of Item A (see Part 1 of Annex D, Item 2). Its over-all length was 21 km, but it was not all laid at the same time. The first part of the trunk line from the Zabrze I Compressor and Purifying Station to the first line branching off this trunk line was 9 km long, 300 mm in diameter, 8 mm thick, and was laid in 1935 by the Germans. The remainder of the trunk line to Item 2 was 12 km long, 250 mm in diameter, 6½ mm thick; the portion to Item 6 was laid in 1935 by the Germans, and the remainder to Item 2 was laid in 1941, also by the Germans. All of the trunk line was designed to operate under 6 atmospheres of pressure, but actually operated under about 3 atmospheres.

1. Branch Line to Item 3, Part 1 of Annex D. (Also see Annex C-5)

This branch line went to the Tarnowskie Gory Activated Carbon Black Factory. It was 17 km long, 250 mm in diameter, 6½ mm thick, was constructed to operate under 6 atmospheres of working pressure, but actually operated under about 3 atmospheres of pressure, and had sleeve-type joints. It was laid in 1941 by the Germans and was in good condition.

The Tarnowskie Gory Activated Carbon Black Factory in TARNOWSKIE GORY received about 4000 m³/h of purified coal gas which was used in the production of activated carbon black.

There were also two short pipelines from the branch line to Items 4 and 5.

- a. Pipeline to Item 4, Part 1 of Annex D

This pipeline transported purified coal gas to the Tarnowskie Gory City Gasworks. It was 1200 m long, 150 mm in diameter, 4½ mm thick, was constructed to operate under about 6 atmospheres of working pressure, but actually operated under about 3 atmospheres, and had sleeve-type joints. This pipeline was laid in 1946 by ZGOZ and was in good condition.

The Tarnowskie Gory City Gasworks was subordinate to the City National Council (Miejska Rada Narodowa). It was located in TARNOWSKIE GORY and received about 800 m³/h of purified coal gas from ZGOZ. At one time this gasworks produced its own gas, but the coke ovens in the gasworks were ruined in 1945 and it began to receive gas from ZGOZ in 1946. The gas was used in homes in TARNOWSKIE GORY.

- b. Pipeline to Item 5, Part 1 of Annex D

This pipeline transported purified coal gas to the Tarnowskie Gory Chemical Factory (Fabryka Chemiczna Tarnowskie Gory). It was ½ km long, 150 mm

CONFIDENTIAL

50X1-HUM

CONFIDENTIAL

38

in diameter, 4½ mm thick, was constructed to operate under 6 atmospheres of working pressure, actually operated under about 3 atmospheres of pressure, and had sleeve-type joints. It was laid in 1941 by the Germans and was in good condition.

The Tarnowskie Gory Chemical Factory was in TARNOWSKIE GORY and produced dyes for textiles. It received about 800 m³/h of purified coal gas from ZGOZ.

2. Branch Line to Item 6, Part 1 of Annex D. (Also see Annex C-5, Item 6)

This pipeline was only 100 m long, too short to include in the annex. It was used to transport purified coal gas to the Bytom Distributing Station, which was on ulica Korfantego in BYTOM. The station received about 2500 m³/h of purified coal gas, which was sent to BYTOM, where it was used in homes and local industries. The station also had a 6000-cubic-meter wet-type gas holder.

3. Branch Line to Item 7, Part 1 of Annex D. (Also see Annex C-5, Item 7)

This was a very short pipeline, 150 m long, which transported purified coal gas to the Zygmunt Steel Works, located in LAGIEWNIKI. It received about 250 m³/h of purified coal gas from ZGOZ.

- (c) Branch Line from the Swietochlowice Compressor and Distributing Station. (See Item 2, Part 1 of Annex D; Item 2, Annex C-9; and Annex C-25.)

The Swietochlowice Compressor and Distributing Station received the remainder of the gas not used by the previously mentioned consumers along the trunk line. (See paragraph 1 E(3)(b).) It also received gas from the Knurów Compressor and Purifying Station. There were two branch lines from this compressor and distributing station.

1. Branch Line to Item 8, Part 1 of Annex D. (Also see Annex C-9, Item 8)

This pipeline transported purified coal gas from the Swietochlowice Compressor and Distributing Station to the Florian Steel Works. It was 1½ km long, 300 mm in diameter, 7½ mm thick, was constructed to operate under 6 atmospheres of working pressure, actually operated under about 3 atmospheres of pressure, and had sleeve-type joints. The pipeline was laid in 1941 by the Germans and was in good condition.

2. Branch Line to Item 9, Part 1 of Annex D. (Also see Annex C-9, Item 2; and Annex C-26, Item 9)

This pipeline extended from the Swietochlowice Compressor and Distributing Station to the Szopienice Compressor and Distributing Station. Gas was actually transported to consumers (Items 10, 11, and 12) along this line from both Item 2 and Item 9 because they could not receive enough gas from either 2 or 9.

This pipeline was 15 kilometers long. The first 8 km of this pipeline from the Swietochlowice Compressor and Distributing Station was 400 mm in diameter, 9 mm thick and was laid in 1942 by the Germans. The remaining 7 km was 300 mm in diameter, 7½ mm thick and was laid in 1951 by Gazobudowa. The whole pipeline was constructed to operate under 6 atmospheres of working pressure, actually operated under about 3 atmospheres of pressure, and had Kulisto-Kielichowe type joints.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

39

There were three short pipelines off this branch line.

- a. Pipeline to Item 10, Part 1 of Annex D. (Also see Annex C-26, Item 10)

This was a very short pipeline to the Baildon Steel Works, which was located on the ZABRZE-KATOWICE Highway in KATOWICE. This steel works received about 4000 m³/h of purified coal gas from ZGOZ, and it produced the following: about 35 percent of the gears used in all types of machines in Poland; tubes for howitzers (size unknown); welding rods; special steel for surgical instruments; drills of all sizes; and milling machines for cutting out gears.

50X1-HUM

[] estimated the labor force of this steel works to be about 4500 workers. Included in this figure were about 125 armed civilian guards in special uniforms.

- b. Pipeline to Item 11, Part 1 of Annex D. (Also see Annex C-26, Item 11)

This was a very short pipeline, that transported purified coal gas to the Katowice Distributing Station, which received about 3000 m³/h of purified coal gas. The gas went to KATOWICE, where it was used in homes and small industries.

- c. Pipeline to Item 12, Part 1 of Annex D. (Also see Annex C-26, Item 12)

This was also a very short pipeline. It transported purified coal gas to the Ferron Steel Works in KATOWICE, which received about 4000 cu m per hour of purified coal gas from ZGOZ.

50X1-HUM

This steel works produced water, gas, and steam pipes, that ranged from 400 mm in diameter to 2000 mm in diameter. [] it sent the Gazobudowa 500 mm pipes and that it also produced pipes for hydroelectric power stations. It also produced bolts for all industries in Poland.

- (d) Branch Lines from the Szopienice Compressor and Distributing Station. (See Part 1 of Annex D, Item 9; Annex C-26, Item 9; and Annex C-27)

The purified gas distributing junction at the Szopienice Compressor and Distributing Station received purified coal gas from the Knurów Compressor and Purifying Station (see Annex D, Item E; and Annex C-3, Item E) and distributed it in three different directions. Mention has already been made of gas being transported back towards the Swietochlowice Distributing Station.

1. Branch Line to Item 13, Part 1 of Annex D. (Also see Annex C-26, Item 13)

This pipeline transported purified coal gas to the Myslowice City Gasworks. It was 3 km long, 150 mm in diameter, 4 mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure and had Kuliste-Kielichowe type joints.

This pipeline was laid in 1956 by Gazobudowa and was in good condition.

CONFIDENTIAL

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50X1-HUM

40

The Myslowice City Gasworks was subordinate to the City National Council and was located in MYSLOWICE. It received from ZGOZ about 700 m³/h of purified coal gas, which was used in homes and small industries in MYSLOWICE.

2. Branch Line to Item 14, Part 1 of Annex D. (Also see Annex C-26, Item 14)

This branch line ran from the Szopienice Compressor and Distributing Station to the Katarzyna Steel Works. It was about 6 km long, 300 mm in diameter, 7½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. The pipeline was laid in 1953 by Gazobudowa and was in good condition.

The Katarzyna Steel Works was in SOSNOWIEC, and it received about 3000 m³/h of purified coal gas from ZGOZ. This steel works produced high-pressure fuel lines for automobiles and airplanes; valves for water, gas, steam, oil, and gasoline pipelines; and I beams, T beams, U beams, L beams, and channel beams for bridges and industrial buildings. [] estimated the labor force of this steel works as about 3000 workers. 50X1-HUM

There were four pipelines that joined the branch line going from Item 9 to Item 14 in Annex D (Part 1). One of these pipelines was a branch from the trunk line from Item B to Item H, and is discussed later in this report.

a. Pipeline to Item 15, Part 1 of Annex D. (Also see Annex C-26, Item 15)

This pipeline transported purified coal gas to the Cedler Steel Works in SOSNOWIEC. It was 400 m long, 250 mm in diameter, 6½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. The pipeline was laid in 1953 by Gazobudowa and was in good condition.

The Cedler Steel Works received about 3000 m³/h of purified coal gas from ZGOZ. It produced steel I-beams, channels, U-beams, and L-beams, that were used in the construction of bridges and industrial buildings.

b. Pipeline to Item 16, Part 1 of Annex D. (Also see Annex C-26, Item 16)

This pipeline transported purified coal gas to the Deichsel Steel Wire and Cable Factory in SOSNOWIEC. The line was 500 m long, 150 mm in diameter, 4½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1954 and was in good condition.

The Deichsel Steel Wire and Cable Factory received about 800 m³/h of purified gas from ZGOZ. It produced wire and cables of all sizes.

c. Pipeline to Item 17, Part 1 of Annex D. (Also see Annex C-26, and Annex C-28, Item 17)

This pipeline transported purified coal gas to the Szczakowa Cement Plant in SZCZAKOWA. It was about 13 km long, 200 mm in diameter, 6½ mm thick.

CONFIDENTIAL

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50X1-HUM

4†

was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had a Kulisto-Kielichowe type joint. It was laid in 1957 by the Krakow Association for Construction of Installations (Krakowskie Zjednoczenie Robot Instalacyjnych), and was in good condition.

The Szczakowa Cement Plant produced cement; it received about 1000 m³/h of purified gas from ZGOZ.

- (e) Trunk Line from Item B to Item A, Part 1 of Annex D. (Also see Annex C-1, Items B and A)

This was a direct trunk line from the Zabrze II to the Zabrze I Compressor and Purifying Station. It had no branch lines. Its sole purpose was to transport 1000 to 5000 cu m per hour of purified coal gas from the Zabrze II to the Zabrze I Compressor and Purifying Station because it was necessary for the latter to distribute more gas than its small purifying stations could purify.

The trunk line was 2 km long, 400 mm in diameter, 9 mm thick, was designed to operate under 6 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1951 by Gazobudowa and was in good condition.

- (f) Trunk Line from Item B to End of Line (See Parts 1 and 2 of Annex D; Annex C-1; Annex C-5; Annex C-29 and Annex C-30)

This trunk line was sometimes referred to as the northern trunk line. It ran from the Zabrze II Compressor and Purifying Station to a dead end 2 km beyond the last branch line going to the Lodz City Gas Works (see Part 2 of Annex D, Item 27).

The over-all length of this trunk line was about 189 km, and it was laid by ZGOZ and Gazobudowa between 1947 and 1957. The diameter and thickness of this pipeline varied. From Item B (see Part 1 of Annex D) to the branch line going to Item 22 it was 500 mm in diameter and 11½ mm thick; from the branch line going to Item 22 to the branch line going to Item 23 it was 400 mm in diameter and 9 mm thick. The remainder of the trunk line was 350 mm in diameter and 7½ mm thick.

The length of the trunk line from the Zabrze II Compressor and Purifying Station to the Czestochowa Compressor and Purifying Station (see Items B and H, Part 1 of Annex D) was designed to operate under 8 atmospheres of working pressure, but actually operated under about 6 atmospheres of pressure. The remainder of the trunk line was designed to operate under 36 atmospheres of working pressure, but actually operated under about 6 atmospheres. This will change, however, when the Czestochowa Compressor and Purifying Station is finished because the compressors in that station were designed to operate under 36 atmospheres of pressure.

That portion of the trunk line between the branch line going to Item 23, and Item H, had butt joints that were butt welded. The remainder of the trunk line had Kulisto-Kielichowe type joints, and there were two pipelines crossing the Warta River so that if something happened to one of the pipelines, the other one could transport the gas while the damaged one was being repaired. this trunk line was in good condition.

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1. Branch Line to Item 18, Part 1 of Annex D. (Also see Annex C-5, Item XIX)

This branch line went to the Kosciuszko Compressor Station. Normally this compressor station did not receive any of the gas, but the pipeline was kept

CONFIDENTIAL

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50X1-HUM

42

under pressure in the event that something happened at the Kosciuszko Steel Works. If something did happen, the Kosciuszko Compressor Station would send purified coal gas to the consumers who normally received raw coal gas from this station.

This branch line was 2 km long, 300 mm in diameter, 7½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. The pipeline was laid by ZGOZ in 1948 and was in good condition.

2. Branch Line to Item 19, Part 1 of Annex D. (Also see Annex C-29, Item 19; and Annex C-31)

This branch line transported purified coal gas to the Jednosc Steel Works in SIEMIANOWICE. It was 2 km long, 250 mm in diameter, 6½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1948 by ZGOZ, and was in good condition.

The Jednosc Steel Works received about 4000 cu m per hour of purified coal gas from ZGOZ. It produced pipes for high-pressure steam boilers, and gas, oil, water and steam pipes up to 150 mm in diameter. Gazobudowa bought some of the pipes from this steel works, which it used in laying small high-pressure gas pipelines and in constructing compressors.

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the labor force for this steel works was about 3500 workers. This included about 30 armed civilian guards in special uniforms.

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the Germans used this steel works to produce antitank guns, antiaircraft guns, and tank guns, but all of the equipment in this steel works was removed by the Soviets in 1945 and taken to USSR.

3. Branch Line to Item 20, Part 1 of Annex D. (Also see Annex 29, Item 20)

This branch line transported purified coal gas to the Czeladz Reduction and Measuring Station. It was 1 km long, 150 mm in diameter, 4½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. The pipeline was laid in 1957 by Gazobudowa, and was in good condition.

The Czeladz Reduction and Measuring Station received 300 cu m per hour of purified coal gas from ZGOZ. It measured the amount of gas received and reduced its pressure before it went into low-pressure gas pipelines of the city. The gas was used in homes in CZELADZ and also in the Czeladz City Hospital.

4. Branch Line to Branch Line Between Item 9 and Item 14, Part 1 of Annex D. (Also see Annex C-29 and Annex C-26.)

This branch line joined the branch line connecting the Szopienice Compressor and Distributing Station and the Katarzyna Steel Works. In addition to providing purified gas to the Milowice Steel Works (see Annex C-26, Item 21), it increased the amount of gas being transported by the branch line from Item 9 to Item 14. Source said that, in case of emergency, gas could also be transported back to Item 9, and from Item 9 to Item 2. The branch line was about 10 km long, 300 mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1951 by Gazobudowa and was in good condition. There was one pipeline from this branch line.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

43

The pipeline to Item 21, Part 1 of Annex D. (also see Annex C-26, Item 21) extended as is indicated.

This pipeline transported purified coal gas to the Milowice Steel Works in MILOWICE. It was one km long, 200 mm in diameter, $6\frac{1}{2}$ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1952 by Gazobudowa and was in good condition.

The Milowice Steel Works received about 1500 cu m per hour of purified coal gas from ZGOZ. It produced oxygen tanks, acetylene tanks, methane bottles (used on vehicles burning methane gas), and bolts and clamps for railroad lines.

5. Branch Line to Item 22, Part 1 of Annex D. (Also see Annex C-30, Item 22)

This branch line transported purified coal gas to the Dzierzynski Steel Works in DABROWA GORNICA. It was 2 km long, 400 mm in diameter, 9 mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1956 by Gazobudowa and was in good condition.

The Dzierzynski Steel Works received 7000 cu m per hour of purified coal gas from ZGOZ. It produced profile steel, sheet steel, and steel rods.

6. Branch Line to Item 23, Part 1 of Annex D. (Also see Annex C-30, Item 23)

This line transported purified coal gas to the Zabkowice Glass Works in ZABKOWICE. It was $\frac{1}{2}$ km long, 150 mm in diameter, $4\frac{1}{2}$ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1955 by Gazobudowa and was in good condition.

The Zabkowice Glass Works received about 2000 cu m per hour of purified coal gas from ZGOZ. It produced windowpanes, bottles, and crystal.

7. Branch Line to Item 24, Part 1 of Annex D.

This branch line led from a temporary purified gas distributing junction at the Czestochowa Compressor and Purifying Station, which was being used until the permanent one at the station went into operation, to the Czestochowa Reduction and Measuring Station. It was 4 km long, 250 mm in diameter, $6\frac{1}{2}$ mm thick, was designed to operate under 12 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had butt joints that were butt welded. It was laid in 1957 by Gazobudowa and was in good condition.

The Czestochowa Reduction and Measuring Station received 300 cu m per hour of purified coal gas. It measured the gas and reduced its pressure before it went into the low pressure gas pipelines of the city. The gas was used in homes in CZESTOCHOWA.

8. Branch Line to Item 25, Part 1 of Annex D.

This branch line transported purified coal gas to the Rudniki Chemical Factory in RUDNIKI. (Fabryka Chemiczna Rudniki w Rudniki). It was $1\frac{1}{2}$ km long,

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

44

150 mm in diameter, 4½ mm thick, was designed to operate under 36 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1957 by Gazobudowa and was in good condition.

The Rudniki Chemical Factory received about 500 cu m per hour of purified coal gas from ZGOZ. It produced chloride clothes dye.

9. Branch Line to Item 26, Part 2 of Annex D

This branch transported purified coal gas to the Piotrkow City Gasworks. It was 1 km long, 200 mm in diameter, 6 mm thick, was designed to operate under 36 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid by Gazobudowa in 1958 and was in good condition.

The Piotrkow City Gasworks was subordinate to the National City Council and was located in PIOTRKOW. It produced about 1000 cu m per hour of coal gas, but that was not enough, so it received 1000 cu m per hour of purified coal gas from ZGOZ. All of this gas was used in homes and small enterprises in PIOTRKOW.

10. Branch Line to Item 27, Part 2 of Annex D

This branch line transported purified coal gas to the Lodz Area Gasworks in LODZ. It was 40 km long, 200 mm in diameter, 5½ mm thick, was designed to operate under 36 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1958 by Gazobudowa and was in good condition.

The Lodz Area Gasworks received about 2000 cu m per hour of purified coal gas from ZGOZ. It was subordinate to the Association of the Gas Industry. It also produced its own gas (about 3500 cu m per hour), but this was not enough for all the homes and small industries in LODZ which it served, so it had to receive about 2000 m³/h of purified coal gas from ZGOZ.

(g) Trunk Line from Item G to Junction with Northern Trunk Line, Part 1 of Annex D

This trunk line transported purified coal gas from the Krakow Compressor and Purifying Station to its junction with the northern trunk line. It was laid in 1957 by Gazobudowa because additional gas was necessary to supply the needs of consumers further north along the northern trunk line.

This trunk line was 90 km long, 350 mm in diameter, 8½ mm thick, was designed to operate under 12 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had butt joints that were butt welded. It was in good condition.

(h) Trunk Line from Item G to Item 28, Part 1 of Annex D

The trunk line transported purified coal gas from the Krakow Compressor and Purifying Station to the Krakow Area Gasworks. It was 9 km long, 300 mm in diameter, 7½ mm thick, was designed to operate under 12 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1957 by Gazobudowa and was in good condition.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

45

The Krakow Area Gasworks was subordinate to the Association of the Gas Industry. It was in KRAKOW and received about 500 cu m per hour of purified coal gas from ZGOZ. It produced about 3400 cu m of coal gas itself and received about 1000 cu m of natural gas from the Tarnow District Gasworks. All this gas was mixed together and sent to KRAKOW, where it was used in homes and small industries.

- (i) Trunk Line from Item E to Item B, Part 1 of Annex D. (Also see Annex C-3, Item E; and Annex C-1, Item B)

This trunk line ran from the Knurów Compressor and Purifying Station to the Zabrze II Compressor and Purifying Station. It remained under pressure, but was seldom used. It served as an emergency trunk line, and was used only in the event that the Knurów or Zabrze II Compressor and Purifying Station needed a large quantity of purified coal gas. The trunk line was about 15 km long, 400 mm in diameter, 9 mm thick, was designed to operate under 8 atmospheres of working pressure, and had Kulisto-Kielichowe type joints. It was laid in 1954 by Gazobudowa and was in good condition.

- (j) Trunk Line from Item E to Item 9, Part 1 of Annex D. (Also see Annex C-3, Item E; Annex C-9; and C-26, Item 9)

This trunk line transported purified coal gas from the Knurów Compressor and Purifying Station to the Szopienice Compressor and Distributing Station. The trunk line was about 34 km long, 400 mm in diameter, 9 mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1954 by Gazobudowa and was in good condition.

There were two branch lines from this trunk line.

1. Branch Line to Item 29, Part 1 of Annex D

This branch line transported purified coal gas to the Tychy Reduction and Measuring Station. It was about 15 km long, 200 mm in diameter, 6½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1956 by Gazobudowa and was in good condition.

The Tychy Reduction and Measuring Station received about 600 cu m per hour of purified coal gas from ZGOZ. It measured the amount of gas received and reduced its pressure before sending it into the low pressure gas pipelines of TYCHY for use in homes.

a. Pipeline to Item 30, Part 1 of Annex D

This pipeline transported purified coal gas to the Mikolow Reduction and Measuring Station. It was ½ km long, 150 mm in diameter, 4½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had butt joints that were butt welded. It was laid in 1956 by Gazobudowa and was in good condition.

The Mikolow Reduction and Measuring Station received about 200 cu m per hour of purified coal gas from ZGOZ. The station measured the amount of gas received and reduced its pressure before it went into the low-pressure pipelines of MIKOLOW for use in homes.

CONFIDENTIAL

50X1-HUM

CONFIDENTIAL

46

2. Branch Line to Item 31, Part 1 of Annex D. (Also see Annex C-9, Item 31)

This branch line transported purified coal gas to the Batory Steel Works. It was 5 km long, 300 mm in diameter, 7½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1956 by Gazbudowa and was in good condition.

The Batory Steel Works received 2000 cu m per hour of purified coal gas from ZGOZ in addition to the raw coal gas it received.

a. Pipeline to Item 2, Part 1 of Annex D (Also see Annex C-9, Item 2)

This pipeline (Item 2, Part 1 of Annex D, also see Annex C-9, Item 2.) transported purified coal gas to the Swietochlowice Compressor and Distributing Station. In fact, most of the gas received by the station was transported by this pipeline, and not by the trunk line from the Zabrze I Compressor and Purifying Station (see Annex D, Part 1; Items A and 2).

This pipeline was about 3 km long, 300 mm in diameter, 7½ mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1956 by Gazbudowa and was in good condition.

(k) Trunk Line from Item C to Item 32, Part 1 of Annex D. (Also see Annex C-22, Item 32)

This trunk line led from the Zdzeszowice Compressor and Purifying Station to the Piotrowice Raw and Purified Coal Gas Distributing Junction. It was one trunk line but it had two different diameters and thicknesses. From the Zdzeszowice Compressor and Purifying Station to one km beyond the branch line to Item 34, it was 400 mm thick and 9 mm in diameter. The remainder of the trunk line to Item 32 was 350 mm in diameter and 7½ mm thick.

The over-all length of the trunk line was about 43 km long. It was designed to operate under 6 atmospheres of working pressure, but actually operated under about 3 atmospheres of pressure. It had butt joints that were butt welded. The trunk line was laid in 1951 by Gazbudowa, and there were two branch lines from it. The trunkline was in good condition.

1. Branch Line to Item 33, Part 1 of Annex D

This branch line transported purified coal gas to the Kedzierzyn City Gasworks. It was about 2½ km long, 150 mm in diameter, 4½ mm thick, was designed to operate under 6 atmospheres of working pressure, actually operated under about 3½ atmospheres of pressure, and had butt joints that were butt welded. The branch line was laid in 1957 by Gazbudowa and was in good condition.

The Kedzierzyn City Gasworks was subordinate to the National City Council. It did not produce gas. It received 500 cu m per hour of purified coal gas from ZGOZ, which was distributed in KEDZIERZYN for use in homes.

2. Branch Line to Item 34, Part 1 of Annex D

This branch line transported purified coal gas to the Azoty Chemical Factory in KEDZIERZYN. The branch line was 2 km long, 300 mm in diameter, 6½ mm thick

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

47

was designed to operate under 6 atmospheres of working pressure, actually operated under about $3\frac{1}{2}$ atmospheres of pressure, and had butt joints that were butt welded. It was laid in 1951 by Gazobudowa and was in good condition.

The Azoty Chemical Factory received about 1500 cu m per hour of purified coal gas from ZGOZ. It produced about 60,000 tons of artificial nitrogen fertilizer for use on farms. It also produced oxygen for industries, hospitals, and chemical laboratories (amount unknown).

- (1) Branch Lines from the Piotrowice Raw and Purified Coal Gas Distributing Junction (See Part 1 of Annex D, Item 32; and Annex C-22, Item 32)

This junction distributed both raw coal gas and purified coal gas. There were three branch lines from this junction that transported purified coal gas.

1. Branch Line to Item 35, Part 1 of Annex D. (Also see Annex C-22, Item 35)

This branch transported purified coal gas to the Labendy Steel Works in LABENDY. It was about 7 km long, 500 mm in diameter, $11\frac{1}{2}$ mm thick, was designed to operate under 6 atmospheres of working pressure, actually operated under about $3\frac{1}{2}$ atmospheres of pressure, and had sleeve-type joints. This branch line was laid in 1956 by Gazobudowa and was in good condition.

The Labendy Steel Works received about 10,500 cu m per hour of purified coal gas from ZGOZ.

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[redacted] this steel works [redacted] produced tank parts, and had a large workshop that assembled the tanks. There was a large tank-testing ground near the steel works. [redacted] tanks being tested there [redacted] looked like the Soviet T-34, but were lower, wider, and more modern looking. The tracks on the tanks were very wide (about 600 mm), and the tanks were very fast. [redacted] noticed several of the tanks traveling on a dirt road parallel to the highway. [redacted] and noted that they were traveling 80 km per hour.

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2. Pipeline to Item 36, Part 1 of Annex D (Also see Annex C-22, Item 36)

The pipeline to Item 36, Part 1 of Annex D, (also see Annex C-22, Item 36) transported purified coal gas to the Ryskowice Reduction and Measuring Station. It was about 5 km long, 200 mm in diameter, $6\frac{1}{2}$ mm thick, was designed to operate under 6 atmospheres of working pressure, actually operated under about $3\frac{1}{2}$ atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1956 by Gazobudowa, and was in good condition.

The Ryskowice Reduction and Measuring Station received from ZGOZ about 300 cu m per hour of purified coal gas. It was sent to RYSKOWICE, where it was used in homes.

2. Branch Line to Item 37, Part 1 of Annex D. (Also see Annex C-22, Item 37)

This branch line transported purified coal gas to the Herminia Steel Works in LABENDY. It was $3\frac{1}{2}$ km long, 500 mm in diameter, $11\frac{1}{2}$ mm thick, was designed to operate under 36 atmospheres of working pressure, actually operated under about $3\frac{1}{2}$ atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1940 by the Germans and was in fair condition.

CONFIDENTIAL

CONFIDENTIAL

50X1-HUM

48

The Herminia Steel Works received about 1500 cu m per hour of purified coal gas from ZGOZ.

This steel works did not produce its own steel. It received steel from the Labendy and Bobrek Steel Works and used it to produce sheet steel.

There was a short pipeline between the Labendy Steel Works (Item 35) and the Herminia Steel Works, but it was not in operation. It was to be used if something happened to the branch line between Item 32 and 35 or between Item 32 and 37. In either case, this pipeline could transport gas to the steel works on the damaged branch line until necessary repairs were made.

a. Pipeline to Item 38, Part 1 of Annex D (Also see Annex C-22, Item 38)

The pipeline to Item 38, Part 1 of Annex D (also see Annex C-22, Item 38) transported purified coal gas to the Labendy City Gasworks. It was $1\frac{1}{2}$ km long, 150 mm in diameter, $4\frac{1}{2}$ mm thick, was designed to operate under 36 atmospheres of pressure, actually operated under about $3\frac{1}{2}$ atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1940 by the Germans and was in fair condition.

The Labendy City Gasworks was subordinate to the National City Council and was located in LABENDY. It received from ZGOZ 400 cu m per hour of purified coal gas, which was used in homes in LABENDY.

3. Branch Line to Item B, Part 1 of Annex D. (Also see Annex C-22; and Annex C-1, Item B)

This branch line transported extra gas not needed by Items 35, 36, 37, and 38, to the raw and purified coal gas distributing junction at the Zabrze II Compressor and Purifying Station. It was 9 km long, 500 mm in diameter, $11\frac{1}{2}$ mm thick, was designed to operate under 6 atmospheres of working pressure, actually operated under about $3\frac{1}{2}$ atmospheres of pressure, and had sleeve-type joints. This pipeline was laid by ZGOZ in 1949 and was in good condition.

(m) Purified Gas from the Carbochemia Compressor and Purifying Station (See Part 1 of Annex D, Item F; and Annex C-3, Item F)

There were no purified gas pipelines from the Carbochemia Compressor and Purifying Station because this station was located in the Carbochemia Activated Carbon Black Plant (Item 39), which received all the gas purified by this station (about 5000 cu m per hour).

(n) Trunk Line from Item D to Item 40, Part 1 of Annex D

This trunk line transported purified coal gas from Radlin Compressor and Purifying Station to the Raciborz City Gasworks. It was 20 km long, 200 mm in diameter, 6 mm thick, was designed to operate under 8 atmospheres of working pressure, actually operated under about $3\frac{1}{2}$ atmospheres of pressure, and had butt joints that were butt welded. There were two pipeline sections crossing the Oder River. These sections were laid one meter below the river bed. The trunk line was laid in 1956 by Gazobudowa and was in good condition.

The Raciborz City Gasworks was subordinate to the National City Council and was located in RACIBORZ. This gasworks produced about 650 cu m per hour of raw coal gas and received 1000 cu m per hour of purified coal gas from ZGOZ, which was used in homes and small industries in RACIBORZ.

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49

1. Branch Line to Item 41, Part 1 of Annex D

This branch line was very short and is not shown in Annex D. It transported purified coal gas to the Plania Carbon Electrode Factory, which produced carbon electrodes. The factory received 500 cu m per hour of purified coal gas from ZGOZ and was located in RACIBORZ.

2. Branch Line to Item 42, Part 1 of Annex D

This was also a very short branch line and is not shown in Part 1 of Annex D. It transported purified coal gas to the FUT Boiler Factory (Fabryka Urzadzen Technicznych).

The FUT Boiler Factory was located in RACIBORZ and produced steam boilers. It received about 1200 cu m per hour of purified coal gas from ZGOZ.

(o) Trunk Line from Item D to Item 43, Part 1 of Annex D

This trunk line ran from the Radlin Compressor and Purifying Station to the Debiensko Compressor Station.

Part of the trunk line from the Radlin Compressor and Purifying Station, as far as the branch line leading to Item 45, was laid in 1948 by ZGOZ. This portion of the trunk line was 350 mm in diameter, 7½ mm thick, and was designed to operate under 6 atmospheres of working pressure.

The remainder of the trunk line was 300 mm in diameter, 7 mm thick, and was designed to operate under 8 atmospheres of working pressure. It was laid in 1958 by Gazobudowa.

The over-all length of the trunk line was about 25 km. All joints were the Kulisto-Kielichowe type, and the whole trunk line operated under about 3 atmospheres of pressure.

There were two branch lines off this trunk line.

1. Branch Line to Item 44, Part 1 of Annex D

This branch line transported purified coal gas to the Rybnik City Gasworks. It was about 1½ km long, 150 mm in diameter, 4½ mm thick, was designed to operate under 6 atmospheres of working pressure, actually operated under about 3 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1948 by ZGOZ and was in good condition.

The Rybnik City Gasworks was located in RYBNIK and was subordinate to the National City Council. It received from ZGOZ about 1500 cu m per hour of purified coal gas, which was used in homes and small industries in RYBNIK.

2. Branch Line to Item 45, Part 1 of Annex D

This branch line transported purified coal gas to the Silesia Steel Works. It was about 200 m long, 350 mm in diameter, 7½ mm thick, was designed to operate under 6 atmospheres of working pressure, actually operated under about 3 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1948 by ZGOZ and was in good condition.

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50

The Silesia Steel Works was in PARUSZOWIEC, and it received about 4000 cu m per hour of purified coal gas from ZGOZ. This steel works received steel from other steel works and used it to produce sheet-steel metal parts for military gas mask canisters, helmets for the Polish Army, and all types of pots and pans for cooking. (Source had no further information)

(4) Natural Gas Pipelines of the Zabrze District (See Part 1 of Annex D)

There was only one natural gas trunk line that was subordinate to ZGOZ. It ran from the Myslowice Measuring Station (see Part 1 of Annex D, Item 46) to the Gliwice Gas Filling Station (see Part 1 of Annex D, Item 47).

There was a constant conflict between the Tarnow District Gasworks and ZGOZ over the responsibility for this trunk line. The Tarnow District Gasworks claimed responsibility for transporting natural gas, but ZGOZ contended that it was responsible, since the natural gas pipeline was located in the ZGOZ area and intermingled with its purified coal gas pipelines. [redacted] this pipeline was the responsibility of ZGOZ [redacted] The natural gas ZGOZ received was measured at the Myslowice Measuring Station, and ZGOZ was billed by the Tarnow District Gasworks for the amount of gas it received. Natural gas pipelines had the same things in common as raw coal gas pipelines or purified coal gas pipelines. The only difference was they transported natural gas.

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- (a) Trunk Line from Item 46 to Item 47, Annex D. (Also see Annexes C-26, C-9, C-5, C-1, and C-22)

The section of the trunk line from Item 46 (Myslowice Measuring Station) to the first junction was about 2 km long, 200 mm in diameter, 6 mm thick, was designed to operate under 10 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints, and was laid in 1948 by ZGOT and was in good condition.

The remainder of this trunk line to the Gliwice Gas Filling Station (Item 47, Annex C-22) was about 41 km long, 150 mm in diameter, 4½ mm thick, was designed to operate under 10 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. That portion of the trunk line as far as Item 52 was laid in 1948 by ZGOZ, and that part between Item 52 and Item 47 was laid in 1952 by Gazobudowa. It was all in good condition.

1. Branch Line to Item 48, Part 1 of Annex D. (Also see Annex C-26, Item 48)

This branch line transported natural gas to the Sosnowiec Gas Filling Station. It was about 3 km long, 100 mm in diameter, 4 mm thick, was designed to operate under 10 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had butt joints that were butt welded. The branch line was laid in 1948 by ZGOT and was in good condition.

The Sosnowiec Gas Filling Station was in SOSNOWIEC. It was capable of receiving 400 cu m per hour of natural gas.¹¹

2. Branch Line to Item 49, Part 1 of Annex D. (Also see Annex C-26, Item 49)

This was a very short branch line to the Szopienice Gas Filling Station in SZOPIENICE. The station could receive 400 cu m per hour of natural gas.

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51

3. Branch Line to Item 50, Part 1 of Annex D. (Also see Annex C-26, Item 50)

This branch line transported natural gas to the Katowice Gas Filling Station. It was 500 m long, 80 mm in diameter, 4 mm thick, was designed to operate under 10 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1950 by Gazobudowa and was in good condition.

The Katowice Gas Filling Station was in KATOWICE. It was capable of receiving 240 cu m per hour of natural gas.

4. Branch Line to Item 31, Part 1 of Annex D. (Also see Annex C-9, Item 31)

This branch line transported natural gas to the Batory Steel Works. It was 1 km long, 150 mm in diameter, 4 $\frac{1}{2}$ mm thick, was designed to operate under 10 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. The pipeline was laid in 1948 by ZGOZ and was in good condition.

The Batory Steel Works received 1000 cu m per hour of natural gas from ZGOZ.

- a. Pipeline to Item 51, Part 1 of Annex D (Also see Annex C-9, Item 51)

The pipeline to Item 51, Part 1 of Annex D (also see Annex C-9, Item 51) transported natural gas to the Hajduki Batory Gas Filling Station. It was 400 m long, 80 mm in diameter, 4 mm thick, was designed to operate under 10 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had Kulisto-Kielichowe type joints. It was laid in 1949 by ZGOZ and was in good condition.

The Hajduki Batory Gas Filling Station was in HAJDUKI BATORY. It was able to receive 240 cu m per hour of natural gas from ZGOZ.

5. Branch Line to Item 52, Part 1 of Annex D. (Also see Annex C-1, Item 52)

This was a very short line to the Zabrze-Maciejow Gas Filling Station, which was in ZABRZE-MACIEJOW and could receive 360 cu m per hour of natural gas.

6. Branch Line to Item 47, Part 1 of Annex D. (Also see Annex C-22, Item 47)

This was a very short branch line from the end of the trunk line to the Gliwice Gas Filling Station, which was in GLIWICE and could receive 240 cu m per hour of natural gas.

- (5) Planned Purified Coal Gas Pipelines of the Zabrze District

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52

- (a) Planned Trunk Line Section from the end of Northern Trunk Line to the Mory Reduction and Measuring Station¹²

This trunk line section was supposed to run from the end of the northern trunkline to the Mory Reduction and Measuring Station.

50X1-HUM

[redacted] a very important link between ZGOZ and ZGOT. [redacted] when this trunk line is laid, enterprises that used to receive natural gas from the Warsaw Area Gasworks will receive purified coal gas from the Bierut Steel Works. The gas will be measured at the Mory Reduction and Measuring Station, and the Warsaw Area Gasworks will pay ZGOZ for the gas it receives, and, in turn, will bill its consumers. This will mean that the Warsaw Area Gasworks will require less natural gas from the ZGOT, making more natural gas available for other consumers of natural gas in the Tarnow District.

This trunk line section would also be very valuable in case of emergency on the northern trunk line. In case something happened on the trunk line, the troubled area could be closed off and purified coal gas could be transported from the south up to the troubled area, and natural gas could be transported from the north down to the troubled area without making any alteration to the existing trunk line or its facilities.

Construction on this trunk line section was supposed to begin in 1959 and end by 1961. This trunk-line section will be 140 km long, 350 mm in diameter, 9 $\frac{1}{2}$ mm thick, designed to operate under 36 atmospheres of working pressure, and will have Kulisto-Kielichowe type joints. It will be laid by Gazobudowa.

- (b) Planned Trunk Line Section from Item C to WROCLAW, Part 1 of Annex D¹²

There was for some time a plan to lay a trunk-line section from the Zdzieszowice Compressor and Purifying Station to the Wroclaw Area Gasworks, thus joining the Zabrze pipeline system with the Walbrzych pipeline system. But there has never been a starting date set for this project. [redacted] because there is already a shortage of gas in this area, and it would be impractical to lay the trunk-line section until more coke plants are constructed.

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[redacted] if this trunk line is laid, it will be 300 mm in diameter, 7 $\frac{1}{2}$ mm thick, will be designed to operate under 12 atmospheres of working pressure, and will have Kulisto-Kielichowe type joints.

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- (6) Pipelines Under Construction in the Zabrze District (See Part 1 of Annex D)

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[redacted] there was only one pipeline under construction in the Zabrze District. This line is shown between Item C and Item 34.

The Azoty Chemical Factory was not getting as much gas as it needed, so a request for more gas was sent through channels in the chemical industry to the Ministry of Chemistry (Ministerstwo Chemii) on ulica Wilcza in WARSAW. At the next meeting of Polish ministries this request was brought up and approved. The Ministry of Heavy Industry (Ministerstwo Przemyslu Ciezkiego - MPC) was ordered to lay a new trunk line from the Zdzieszowice Compressor and Purifying Station directly to the Azoty Chemical Factory. The Ministry of Heavy Industry passed down the order to the Association of the Gas Industry, which in turn passed down the order to ZGOZ, which submitted the work order to Gazobudowa to do the job.

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53

Construction work also started [] to increase the capacity of the Zdzieszowice Compressor Station. This was to be finished in 1960.

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[] a compressor station was under construction in the Azoty Chemical Factory, [] it belonged to the chemical industry. [] it would be finished in 1960.

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When this new trunk line goes into operation, the Azoty Chemical Factory will receive the total gas production of the Zdzieszowice Coke Plant (35,000 cu m per hour). It will consume about 17,000 cu m per hour of this gas in removing hydrogen used in the production of nitrogen fertilizer, after which the quality of the remaining gas will become 8000 k/cal per cu m. Three thousand to four thousand cu m per hour of this gas will go to Piotrowice Raw and Purified Coal Gas Distributing Junction. About 14,000 cu m per hour will be transported by the old trunk line back to the Zdzieszowice Coke Plant, where it will be burned in the coke ovens to produce more raw coal gas; and 500 cu m per hour will go to the Kedzierzyn City Gasworks. [] this trunk line will be about 18 km long, 500 mm in diameter, 1 1/2 mm thick, designed to operate under 6 atmospheres of working pressure, and have butt joints that are butt welded. This pipeline was being laid by Gazobudowa.

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[] concerning what would be done about the other consumers when the Azoty Chemical Factory starts consuming such a large quantity of gas, [] there was a plan to construct a gasworks near the Labendy Steel Works that would be subordinate to ZGOZ. This gasworks was to produce 50,000 to 60,000 cu m per hour of generator gas for the ZGOZ pipeline system, using the Lurgi method. However, after the discovery of natural gas at LUBACZOW, this plan was changed. The new plan was to mix natural gas with coal gas to make up for this deficit. But no starting date for this change had been announced.

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This latest plan [] would be a great mistake because natural gas was a good raw material for the chemical industry, whereas generator gas would be good enough to burn for heat energy.

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[] there was also a third plan but it was only in the discussion stage []. The plan was to repair the gas generators (number unknown) that were presently in existence at the Zdzieszowice Coke Plant, to mix the generator gas produced by these generators with the gas returning from the Azoty Chemical Factory, and to burn this mixture in the coke ovens of the Zdzieszowice Coke Plant. This action would result in less gas being returned from the Azoty Chemical Factory, and more gas being transported by trunk line to the Piotrowice Raw and Purified Coal Gas Distributing Junction. This would not only provide more gas for the pipeline network but would also decrease the danger of an explosion by decreasing the amount of K/cal per cu m of gas that was burned in the coke ovens. [] this was the best of the three plans because it was more practical than building a new gasworks, or burning natural gas for heat energy which could otherwise be used by the chemical industry as a raw material.

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(7) Critical Points of the Zabrze Gas Pipeline Network

[] the best way to destroy the Zabrze gas pipeline network would be to destroy the coke plants and steel works that produced the gas or, if only one point could be hit, to destroy the nerve center of the Zabrze gas pipeline network, which was in ZABRZE.

50X1-HUM

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54

(a) Destruction of Coke Plants and Steel Works

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[redacted] the best way to destroy the Zabrze gas pipeline system would be to destroy the coke plants and steel works which produced gas for the system. Destruction would mean: (a) there would be no gas to distribute; (b) the metallurgical industry would get no coke from these installations; (c) by destroying the steel works that produced gas for ZGOZ, their production of steel would also stop; and (d) the chemical industry would no longer receive naphthalene, benzol, phenol, coal tar, and ammonia from these gas-producing installations.

(b) Destruction of the Nerve Center of the Zabrze Gas Pipeline Network

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[redacted] if only one point could be destroyed, most damage could be inflicted by destroying the nerve center of the Zabrze gas pipeline system located in ZABRZE. There were four installations located in this nerve center, the Zabrze I Compressor and Purifying Station (Annex C-1, Item A), the Zabrze II Compressor and Purifying Station (Annex C-1, Item B), the Zaborze Coke Plant (Annex C-1, Item I), and the Zaborze Compressor Station (Annex C-1, Item II).

In addition, ZABRZE was an important distributing center. By using the gas distributing junctions at the Zabrze I, and Zabrze II Compressor and Purifying Stations, and at the Zaborze Compressor Station, any amount of gas could be sent in any direction at any time just by regulating the valves at these distributing junctions.

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COMMENTS:

2. [redacted] the following figures on costs of gas to consumers: Industrial consumers paid .25 zlotys per cu m of raw coal gas and .50 zlotys per cu m of purified coal gas; private consumers paid .50 zlotys for the first 25 cu m of purified gas and .25 zlotys for each cu m over 25 cu m.

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4.

[redacted] the Blachownia Chemical Plant (Zaklady Chemiczne Blachownia) received 50 percent of the coal tar produced by steel works and coke plants in Poland.

[redacted] the Blachownia Chemical Plant received 40 percent of the benzol produced by steel works and coke plants in Poland.

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[redacted] a pipeline from the Zdzeszowice Compressor and Purifying Station to the Piotrowice Raw and Purified Coal Gas Distributing Junction. [redacted] ran through the territory of the chemical plant.

[redacted] The chemical plant was in the woods in BLACHOWNIA, next door to the Azoty Chemical Factory, and 1 kilometer from the SLAWIECICE-BLACHOWNIA-KEDZIERZYN Highway.

It was the largest, most modern, and efficient chemical plant in Poland that was engaged in the distillation of coal tar and benzol, and it was constantly being enlarged. It had a large laboratory, and about 40 chemists were employed there.

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50X1-HUM

55

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the plant was guarded very heavily.
 on one relief there were 50 to 60 civilian guards, all armed and in special uniform, guarding this plant.

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the Sarzyna Chemical Factory (Fabryka Chemiczna Sarzyna) in SARZYNA, which was mostly underground, received toluene from the Blachownia Chemical Factory and used it in the production of tretyl.

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There was another factory, the Krywald Chemical Factory (Fabryka Chemiczna Krywald) in KRYWALD, that received toluene from the Blachownia Chemical Factory.

the plant produced four qualities of amonite, signal flares, gunpowder, and smokeless gunpowder. there was a firing range at this factory where the penetrating power of antitank shells was tested.

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because of the testing and experimenting at the factory, there were, on the average, two or three accidents a year. In autumn 1957 there was an explosion there, and 15 people were killed.

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6. older men had to travel around to give technical advice when this could be done by younger men. there were very few young engineers left in East Germany because most of them had fled to the West.

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8. gas pipes were made out of normal steel, and the standards for steel in Poland were listed under Polish Standard for Steel (Polska Norma-Hutnicza PN-H), which was written by the Polish Committee on Standardization (Polski Komitet Normalizacyjny - PKN). The PKN was subordinate to the Office of the Council of Ministers (Urząd Rady Ministrów). the following information the quality of normal steel:

50X1-HUM

Tensile strength	35-45 kg per mm ²
Resistance to impact	25-35 kg per mm ²
Expansion	15-18 percent
Bending strength	180 degrees

Chemical Composition of Normal Steel in Poland

Carbon C	0.15 percent max
Phosphorus P	0.15 percent max
Silicon Si	0.005 percent max
Sulphur S	0.010 percent max
Manganese Mn	trace
Nickel Ni	trace

9. The Lenin Thermoelectric Plant did not pay ZGOZ for the gas it received, which was unusual, because all other thermoelectric plants and stations in the Zabrze District did pay ZGOZ for the gas they received

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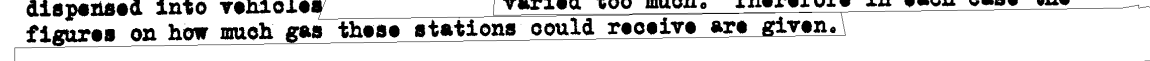
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56



11. [redacted] much gas [redacted] filling stations
dispensed into vehicles [redacted] varied too much. Therefore in each case the
figures on how much gas these stations could receive are given.



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57

Annex A

SKETCH AND PINPOINT LOCATION OF THE MAIN OFFICE OF ZGOZ IN
ZABRZE, POLAND

Figure 1

Railroad Bridge 50X1-HUM

Legend:

1. ZGOZ building facing ulica Wolnosci 311
2. ZGOZ building facing ulica Dworcowa
3. Apartment House
4. Apartment House
5. Yard
6. Apartment House
7. Hotel Przodownik
8. Tunnel for pedestrians
9. Main Railroad Station

NOTE: [redacted], the buildings represented by Items 1, 2, 3, 6, and 7 abutted each other as shown on the sketch.

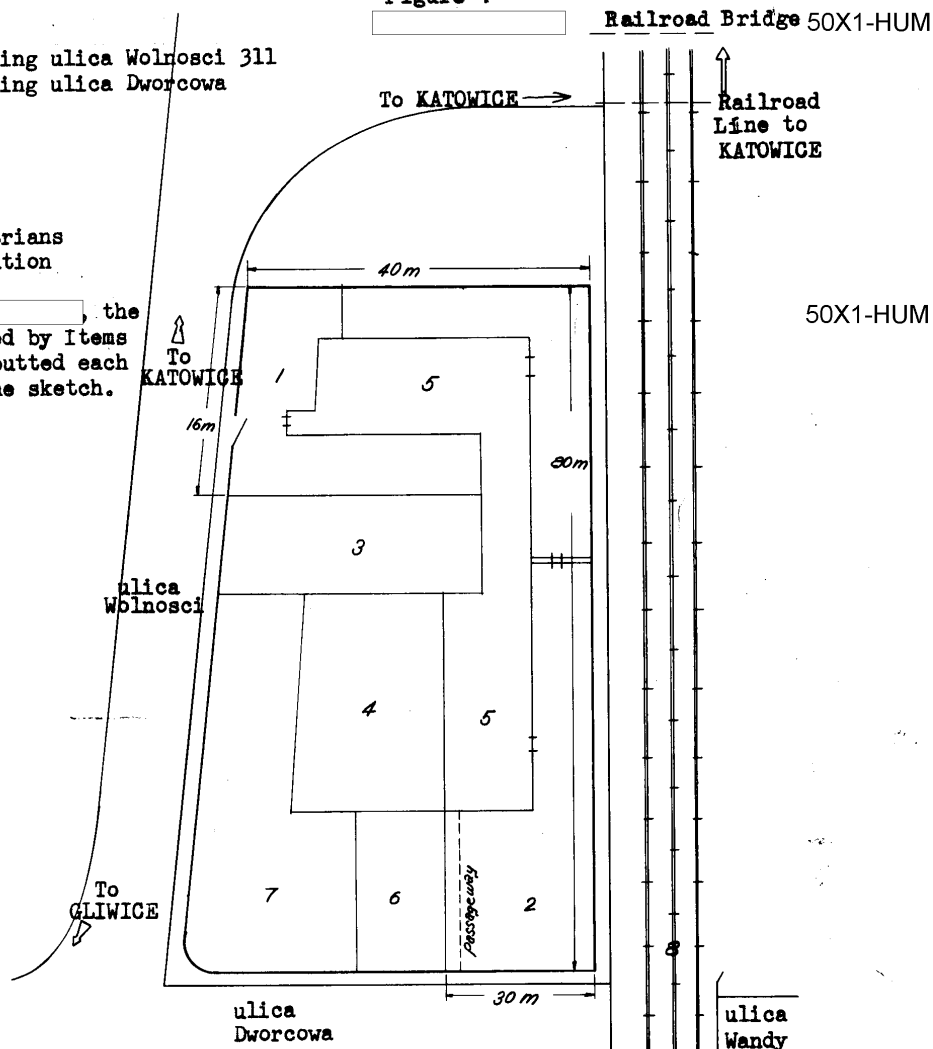
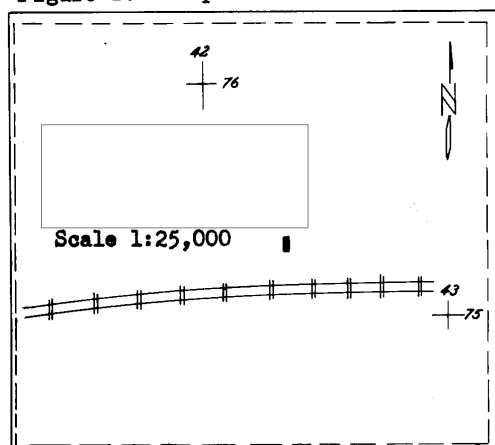


Figure 2. Pinpoint Location



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Annex A-1
FLOOR PLAN SKETCH OF THE MAIN OFFICE OF ZGOZ IN ZABRZE, POLAND

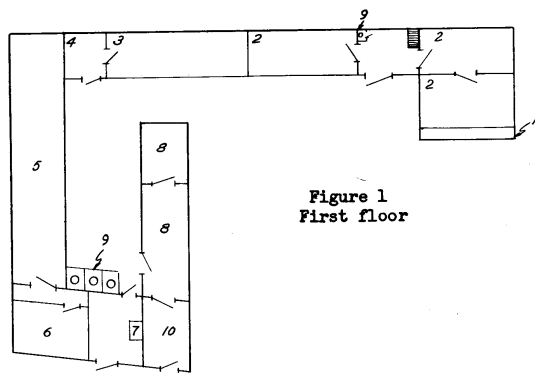


Figure 1
First floor

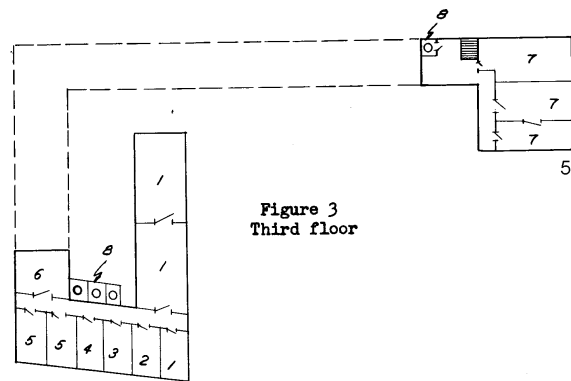


Figure 3
Third floor

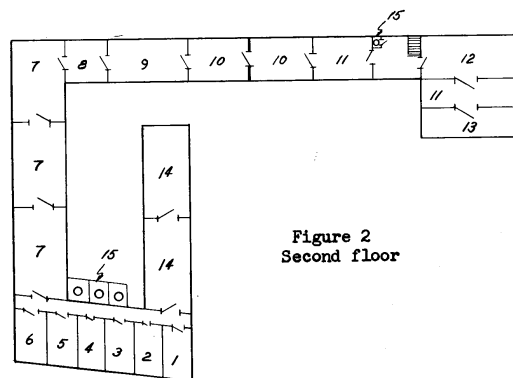


Figure 2
Second floor

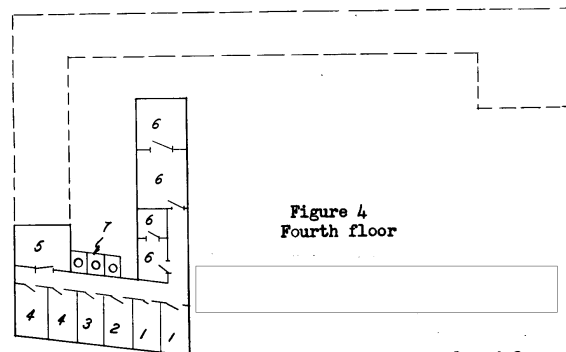


Figure 4
Fourth floor

NOTE: Also see Figures 1 and 2,
Annex A.

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58

50X1-HUM

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59

Legend to Annex A-1

Figure 1 (First floor)

1. Entrance from ulica Dworcowa
2. Supply Branch
3. Administrative Chief, Legal Advisors Section, and Classified Room
4. Entryway
5. Conference Hall
6. Cashier
7. Reception Office
8. Administrative Branch
9. Toilets
10. Snack Bar

Figure 2 (Second floor)

1. Director
2. Secretary
3. Personnel Branch
4. Second Deputy Director for Administrative Affairs
5. Secretaries for the First and Second Deputy Directors
6. First Deputy Director, Chief Engineer
7. Production Branch
8. Corridor
9. Technical Documentation Branch
10. Technical Inspections Branch
11. Bill Reckoning Branch
12. Legal Branch
13. Third Deputy Director for Investments
14. Main Bookkeeping Branch
15. Toilets

Figure 3 (Third floor)

1. Main Bookkeeping Branch
2. Office of the Enterprise's Communist Party Organization
3. Social Branch
4. Fire Prevention Branch and Accident Prevention Branch
5. Construction Branch
6. Collection Office for Industrial Consumers
7. Workers' Private Apartments
8. Toilets

Figure 4 (Fourth floor)

1. Offices of the General Technical Branch
2. Factory Council
3. Inspector from the State Gas Inspection Department
4. Planning Branch
5. Switchboard and Telegraph to WARSAW, Association of the Gas Industry
6. Apartments for the Cleaning Women

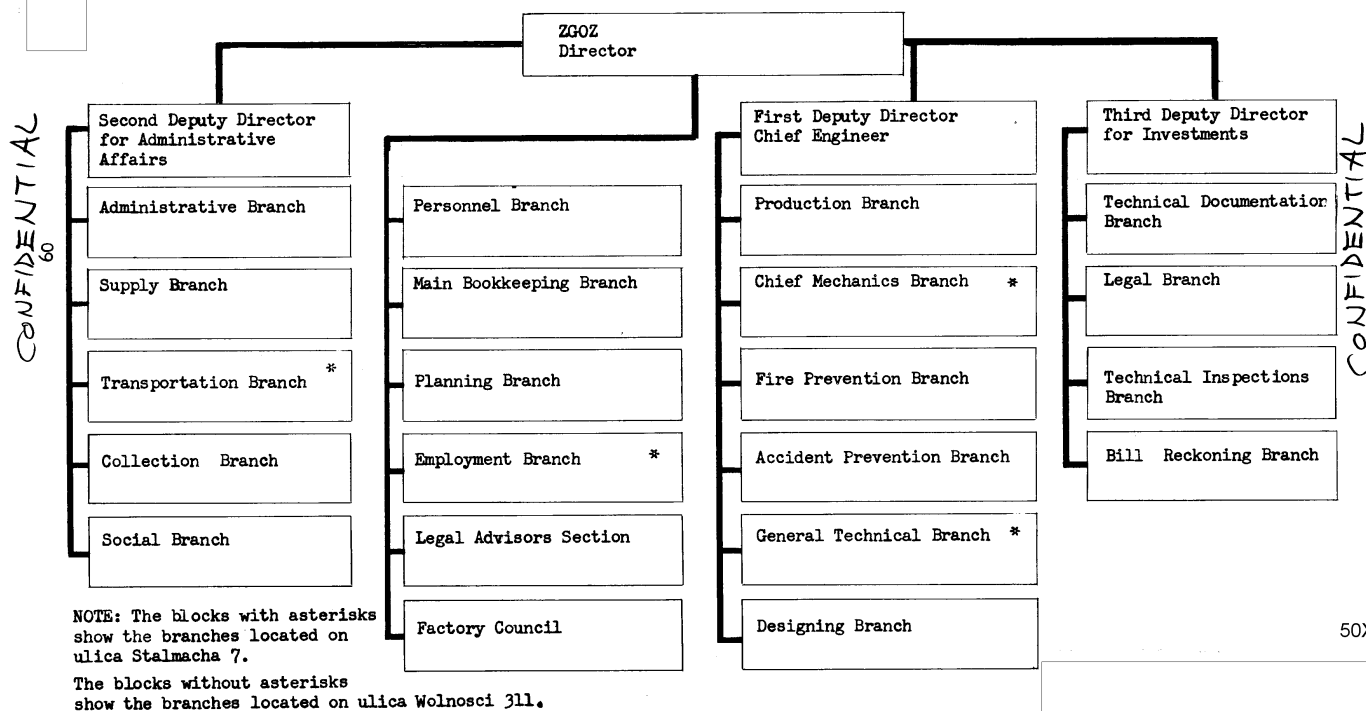
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Annex B

THE ORGANIZATIONAL CHART OF THE MAIN OFFICE OF THE ZABRZE DISTRICT GASWORKS IN ZABRZE, POLAND

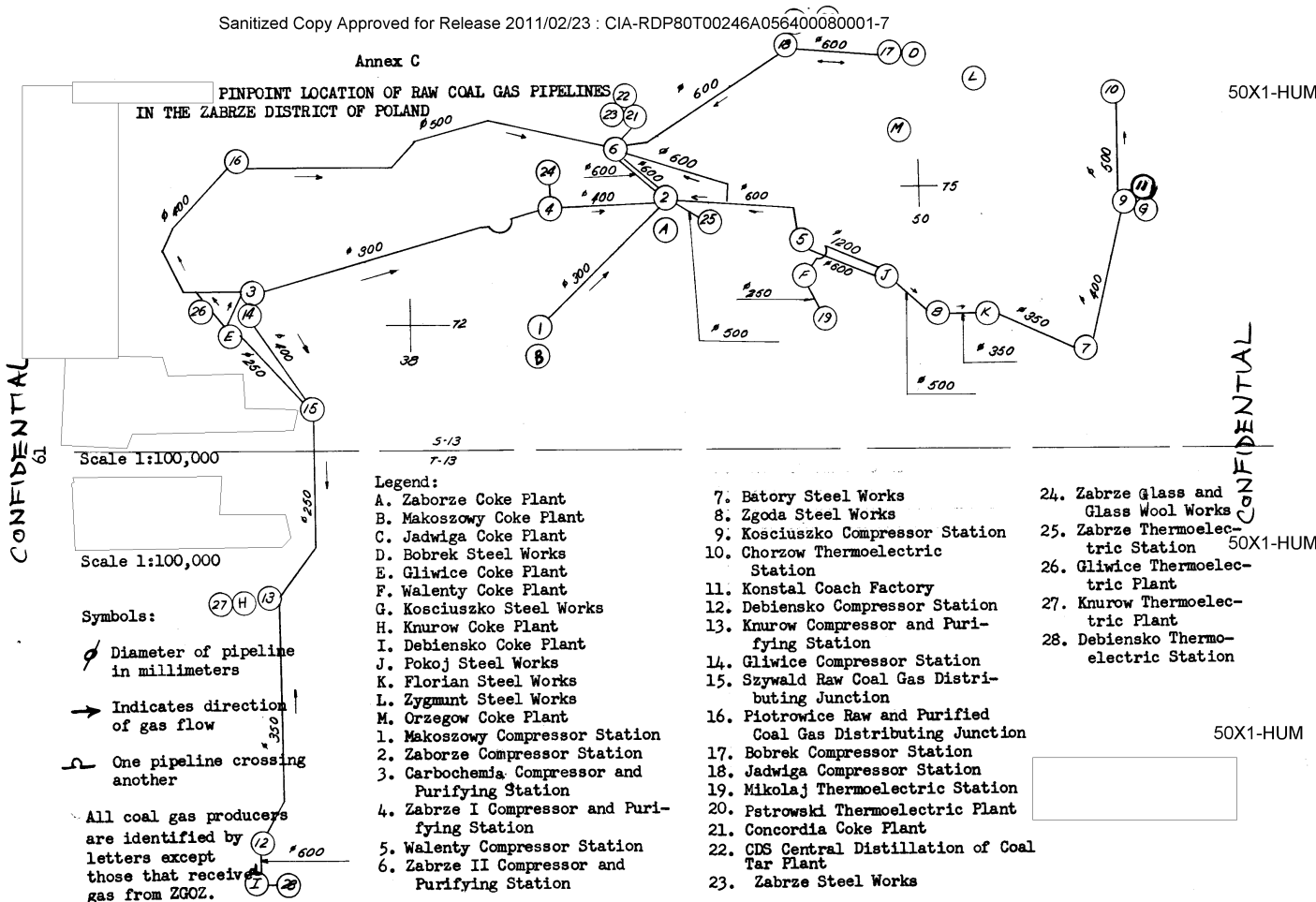
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Annex C

PINPOINT LOCATION OF RAW COAL GAS PIPELINES
IN THE ZABRZE DISTRICT OF POLAND



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63

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Legend to Annex C-1

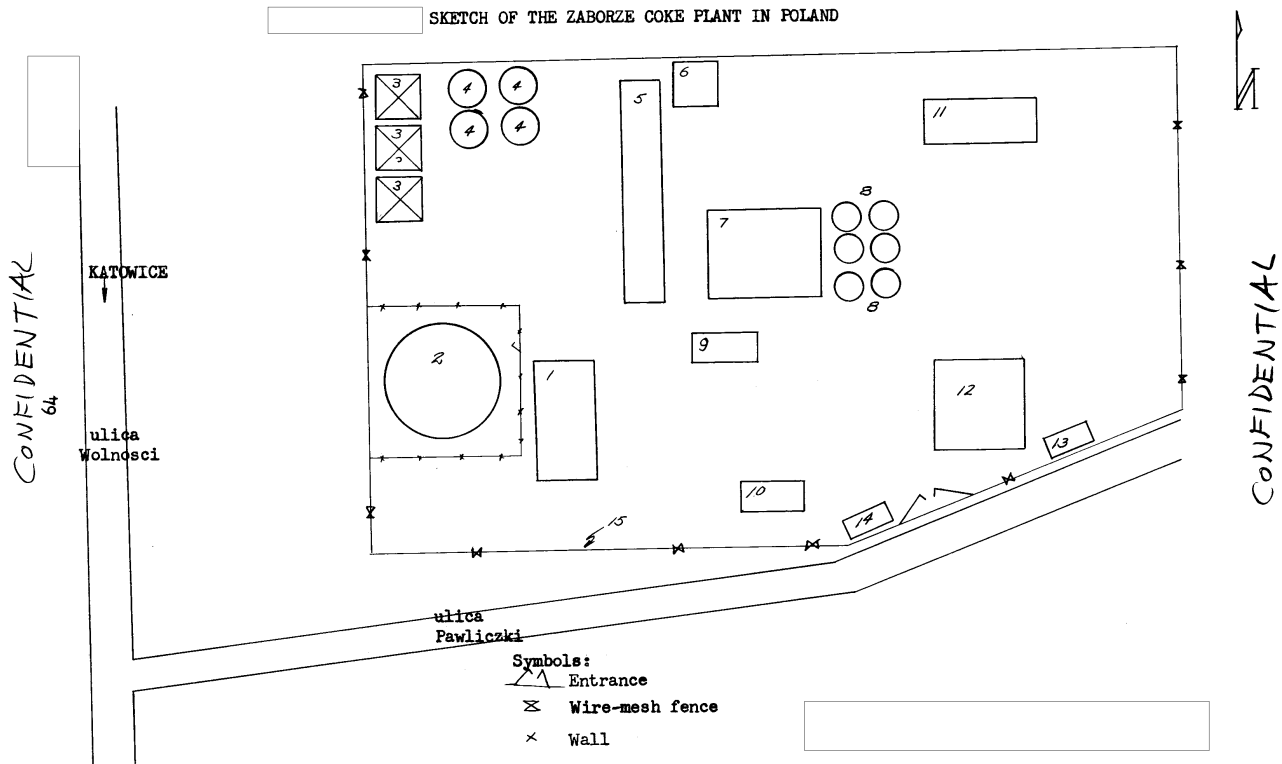
- A. Zabrze I Compressor and Purifying Station
- B. Zabrze II Compressor and Purifying Station
- I. Zaborze Coke Plant
- II. Zaborze Compressor Station
- III. Concordia Coke Plant
- IV. CDS Central Distillation of Coal Tar Plant
- V. Zabrze Steel Works
- VI. Zabrze Glass and Glass Wool Works
- 52 Zabrze-Maciejow Gas Filling Station

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Annex C-2

SKETCH OF THE ZABORZE COKE PLANT IN POLAND



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65

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Legend to Annex C-2

Annex C-2 shows all installations subordinate to the Zaborze Compressor Station and those major installations subordinate to the Zaborze Coke Plant

Items 1 and 2 on Annex C-2 were parts of the Zaborze Compressor Station.

50X1-HUM

1. Compressor building. One-story, red brick, measuring 20 x 10 x 7 m. It contained two East German Aertzner-type gas exhausters constructed by Gazobudowa in 1954. They were designed to operate under .8 atmospheres of working pressure, but actually operated under .6 atmospheres of pressure. Each had a 6000 cu m per hour capacity and was powered by a 220 kw, 6000 V, M-5 electric motor, which was manufactured at the Wroclaw Electric Motor Plant M-5 (Wroclawska Wytownia Silnikow Elektrycznych M-5) located in WROCLAW (street unknown). Both gas exhausters were in good condition.

This building also contained a third German Aertzner-type gas exhauster, but it was an older one constructed in 1935 by the Germans. It was designed to operate under 16 atmospheres of working pressure, but actually operated under .4 to .6 atmospheres of pressure. Its capacity was 5000 cu m per hour and it had a 180 kw, 500 V electric motor (type unknown). This compressor operated satisfactorily, but it had already passed its life expectancy and was not expected to last much longer.

50X1-HUM

There was also a control room in the building which contained controls used to open and close the valves in the raw coal gas distribution junction located underground near the compressor station.

2. A MAN dry-type, raw gas holder, 40 m in diameter and 60 m high, enclosed on 3 sides by a wire-mesh fence with 3 strands of barbed wire on top, and on the fourth side by a reinforced-concrete fence also with 3 strands of barbed wire on top. Both the wire-mesh fence and the reinforced-concrete fence were 2½ m high. The capacity of the gas holder was 60,000 cu m, and it was built just after World War I by the Germans. Although it was old, it was in good condition.

3. Three concrete bunkers, measuring 25 x 25 x 2½ m, where coal tar pitch was poured.

4. Four retort furnaces used in the distillation of coal tar. Each furnace was made of sheet steel and was 7 m in diameter and 8 m high. They were built by the Sosnowiec Steam Boiler Factory (Fabryka Kotlow Parowych w Sosnowiec) located in SOSNOWIEC.

5. Coke battery

6. Coal crushing building, 5-story, red brick, measuring 20 x 20 x 20 m. It contained a coal crusher.

7. Chemical building, 1-story, red brick, measuring 35 x 18 x 7 m. It was used by persons who were engaged in removing chemical properties from raw coal gas.

8. Six gas scrub towers.

9. Dining hall for workers, a 1-story, red brick building, measuring 15 x 8 x 4 m (seating capacity unknown).

10. Unknown building

11. Mechanical workshop, a 1-story, red brick building, measuring 30 x 10 x 5 m. It was used to make repairs on machines and replacement parts for them.

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66

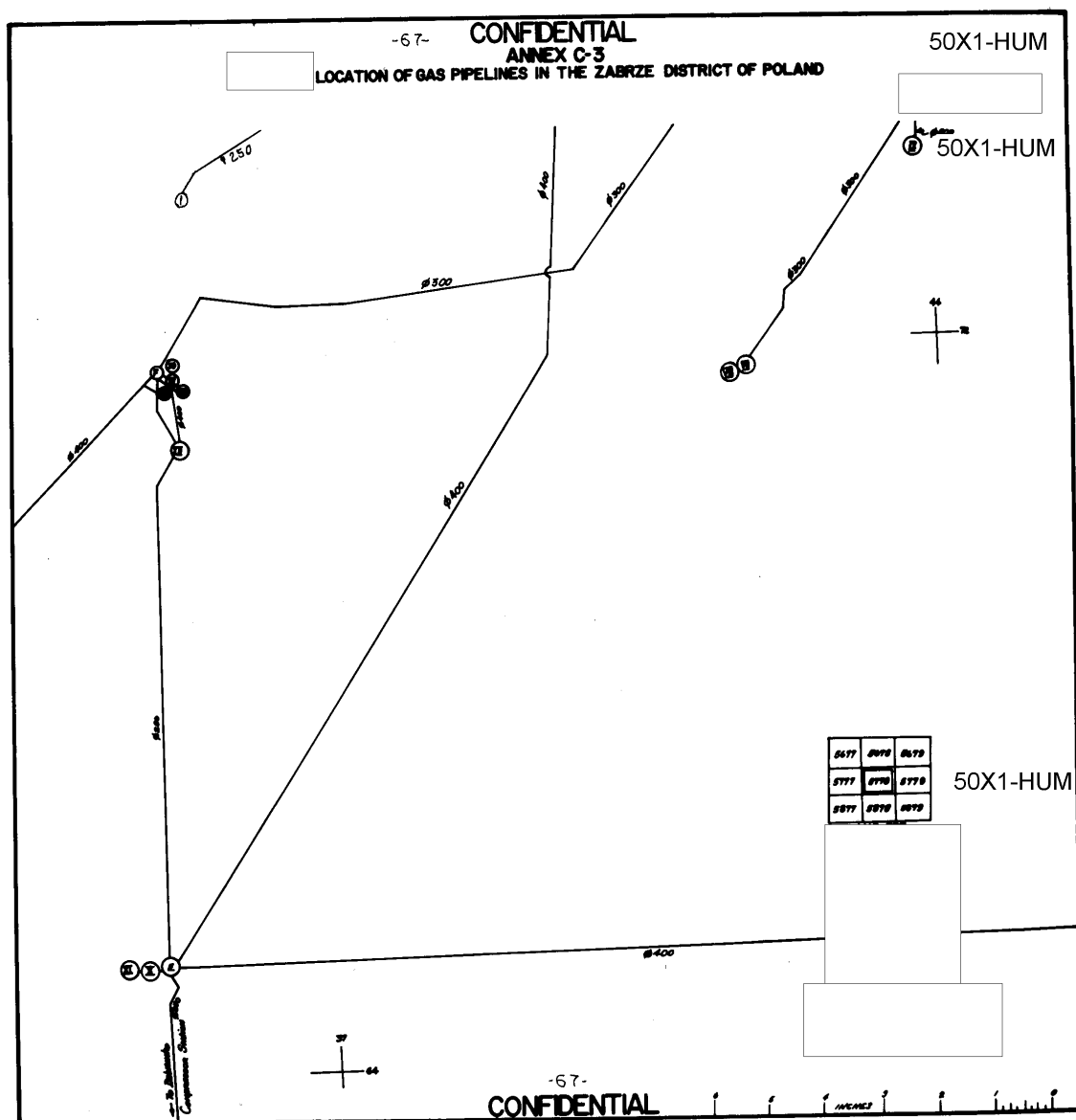


50X1-HUM

Legend to Annex C-2 (Cont'd)

12. Plant boiler works, a 2-story, red brick building, measuring 35 x 35 x 20 m.
13. Gasoline station for the plant, a 1-story, red brick building measuring 10 x 6 x 5 m. It supplied gasoline into trucks and automobiles.
14. Entrance building, 1-story, red brick, measuring 6 x 4 x 4 m. There were two armed civilian guards posted here who checked the passes of people coming in and going out.
15. Reinforced-concrete wall, 2½ m high, with 3 strands of barbed wire on top. The wall encircled the coke plant completely. This area was about 1½ kilometers long and 800 m wide. Only that part of it showing the major installations appears in Annex C-2.

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68

50X1-HUM

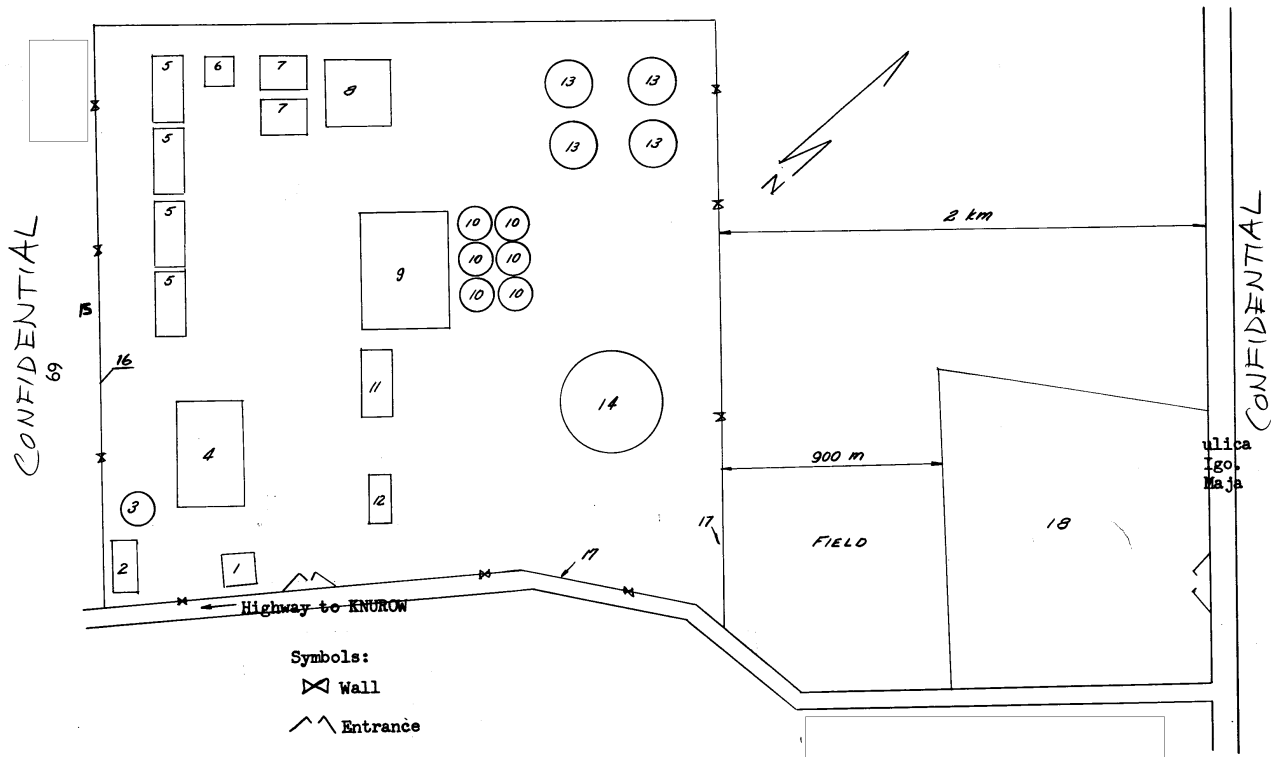
Legend to Annex C-3

- VII.. Makoszowy Compressor Station
- VIII. Makoszowy Coke Plant
- IX. Zabrze Thermoelectric Station
- X. Knurów Coke Plant
- XI. Knurów Thermoelectric Plant
- XII. Szywald Raw Coal Gas Distributing Junction
- XIII. Gliwice Coke Plant
- XIV. Gliwice Thermoelectric Plant
- XV. Gliwice Compressor Station
- E. Knurów Compressor and Purifying Station
- F. Carbochemia Compressor and Purifying Station
- 1. Gliwice Distributing Station
- 39. Carbochemia Activated Carbon Black Factory

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Annex C-4

SKETCH OF THE MAKOSZOWY COKE PLANT IN POLAND



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70

50X1-HUM

Legend to Annex C-4

Annex C-4 shows all installations subordinate to the Makoszowy Compressor Station and those major installations subordinate to the Makoszowy Coke Plant

Only that portion of the coke plant where those installations were located is shown on Annex C-4. Items 1, 2, 3, and 4 were subordinate to the Makoszowy Compressor Station. 50X1-HUM

1. Entrance building. 1-story, red brick building, measuring 5 x 5 x 4 m. There were two armed civilian guards here who checked the passes of the people coming in and going out.
2. Electrical distributing building. This was a 1-story, red brick building measuring 70 x 7 x 6 m.
3. Water cooling tower. The over-all height of this tower, reinforced concrete post supports plus water tank, was 25 m. The tank was about 10 m in diameter. Water from the tower was used to cool the compressors of the compressor station.
4. Compressor building. This was a 2-story, red brick building, measuring 25 x 14 x 8 m. The basement of the building contained a pumping unit, which was used to cool the five compressors which were in the building.

Three of the compressors, constructed in 1934, were German, high-pressure, piston type Schutz. They were designed to operate under four atmospheres of working pressure but actually operated under about three. Each compressor had a capacity of 5000 cu m per hour and was powered by a 330 kw, 6000 V Siemens electric motor.

the compressors were in very poor condition.

50X1-HUM

The other two compressors were Austrian, high-pressure, piston type, Maw. The capacity of each was 6000 cu m per hour. They were designed to operate under four atmospheres of working pressure, but actually operated under three. Each compressor was powered by a 350 kw, 6000 V, M-5 electric motor from the Wroclaw Electric Motor Plant M-5. One of the compressors was constructed in 1955, the other in 1957. Both were in good condition.

5. Four coke batteries
6. Slaking tower. This tower, measuring 25 x 7 x 20 m, was made out of reinforced concrete and red brick, with the brick on the outside. Its maximum load capacity during slaking was 35 tons.
7. Two overhead coal bunkers. These bunkers, measuring 15 x 12 x 15 m, were made out of reinforced concrete.
8. Coal-crushing building. This was a 5-story, red brick building, measuring 25 x 25 x 20 m, containing a coal crusher.
9. Chemical building. This 1-story, red brick building, measuring 40 x 15 x 7 m, was used by the workers who removed chemical properties from raw coal gas.
10. Six gas scrub towers
11. Administrative building and laboratory. This was a 2-story red brick building, measuring 25 x 15 x 9 m.
12. Electrical distributing building. This was a 1-story, red brick building measuring 12 x 6 x 5 m.
13. Four water-cooling towers. These towers were used to cool the water that cooled the gas and machines belonging to the coke plant.

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71

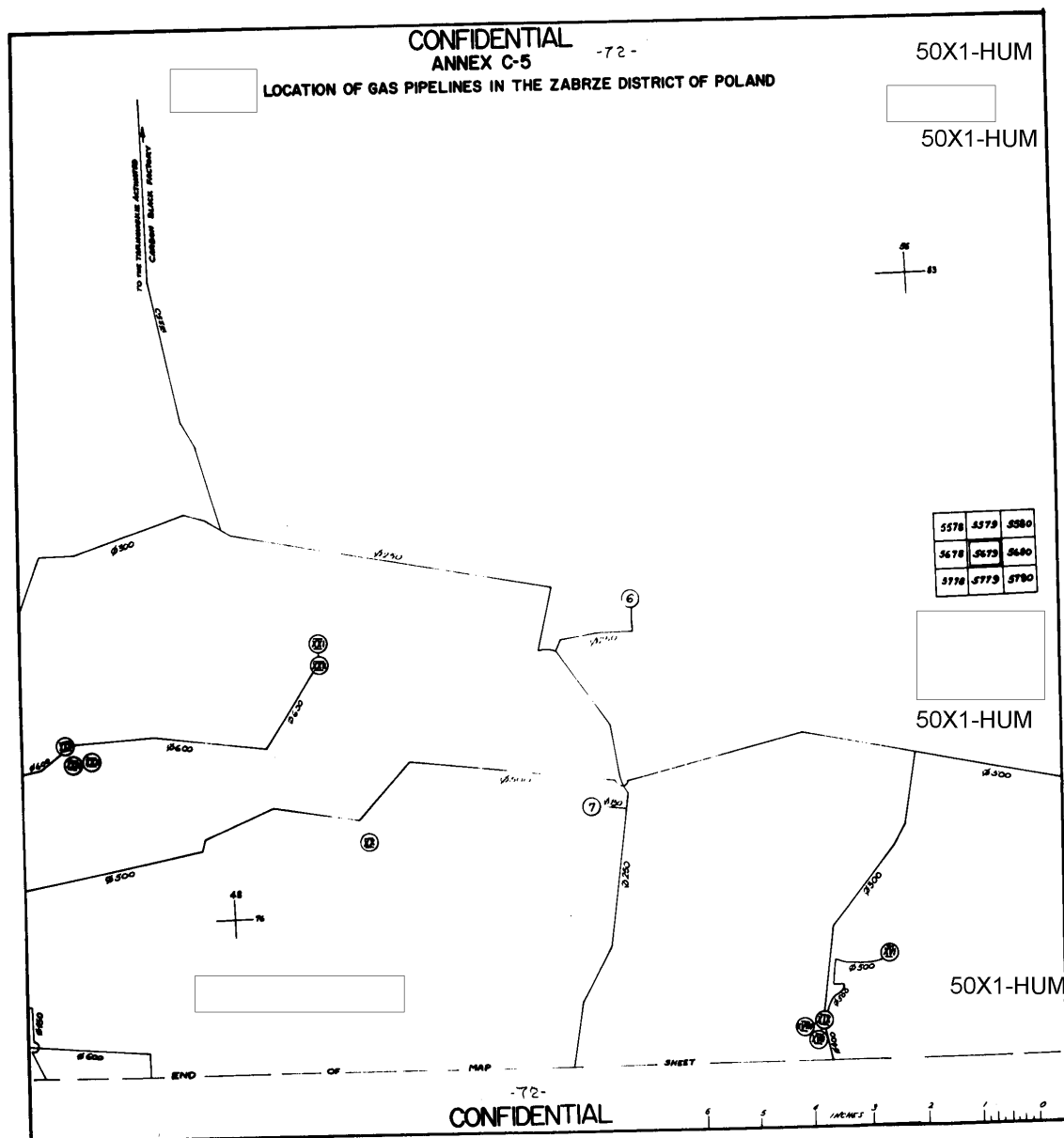


50X1-HUM

Legend to Annex C-4 (Cont'd)

14. Gas holder. This was a wet-type raw gas holder. Its capacity was 20,000 cu m.
15. Makoszowy coal mine
16. Reinforced-concrete fence. It was $2\frac{1}{2}$ m high and had 3 strands of barbed wire on top. It was about 1 km wide across the front and about 1.6 km long down the right side of the coke plant.
17. Red brick fence. It was $2\frac{1}{2}$ m high and had 3 strands of barbed wire on top. It was about 1 km long down the left side of the coke plant and about 1.6 km wide across the rear.
18. Old Guido Coal Mine. Not operating as of 1959.

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73



50X1-HUM

Legend to Annex C-5

- XVI. Chorzow Thermoelectric Station
- XVII. Kosciuszko Steel Works
- XVIII. Konstal Coach Factory
- XIX. Kosciuszko Compressor Station
- XX. Orzegow Coke Plant
- XXI. Bobrek Steel Works
- XXII. Bobrek Compressor Station
- XXIII. Jadwiga Coke Plant
- XXIV. Jadwiga Compressor Station
- XXV. Pstrowski Thermoelectric Plant
- 6. Bytom Distributing Station
- 7. Zygmunt Steel Works

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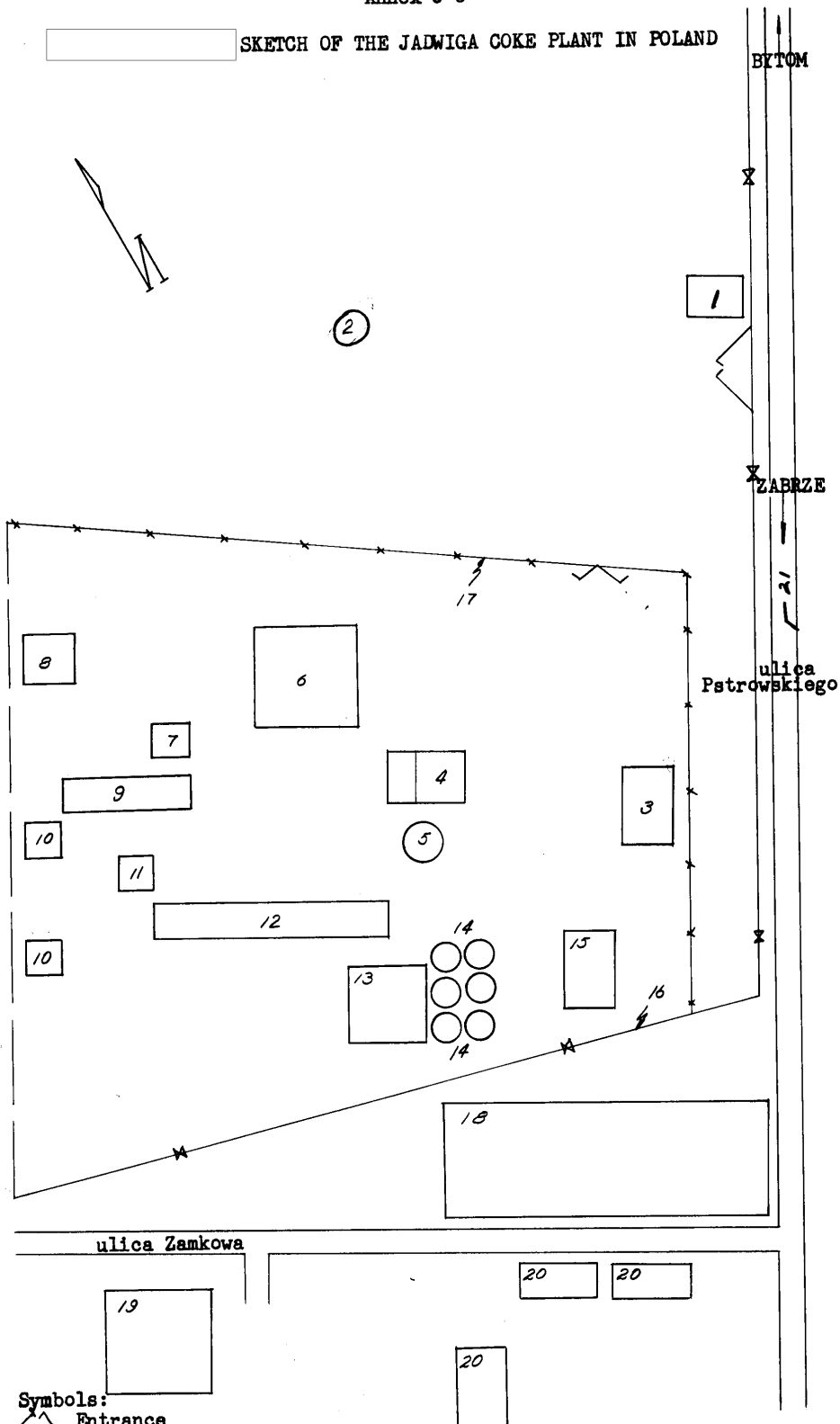
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74

Annex C-6

SKETCH OF THE JADWIGA COKE PLANT IN POLAND

50X1-HUM

50X1-HUM



Symbols:
△ Entrance
x Wall
x Wire mesh

50X1-HUM

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75

50X1-HUM

Legend to Annex C-6

Annex C-6 shows those major installations subordinate to the Jadwiga Coke Plant and one installation subordinate to the Jadwiga Compressor Station. Only that area of the coke plant containing these installations is shown in Annex C-6.

1. Entrance building. This was the entrance building to the Pstrowski Coal Mine and the Jadwiga Coke Plant. It was a 1-story, red brick building, measuring 8 x 5 x 4 m. There were two armed civilian guards here who checked the passes of people coming in and going out.

2. Pstrowski Coal Mine

3. Fire station and garage. This was a 1-story, red brick building, measuring 15 x 10 x 5 m. There were 4 Star-21 fire trucks in this building, that were manufactured in Poland.

4. Compressor building and supply building for the coke plant. A 2-story red brick building, measuring 35 x 15 x 16 m. Most of it was occupied by the Jadwiga Compressor Station, and a small portion of it was used to store supplies for the coke plant.

There were four gas exhausters in the building; two were East German gas exhausters, Aertzner type, constructed in 1954 by Gazobudowa. They were designed to operate under .8 atmospheres of working pressure but actually operated under .6 atmospheres of pressure. Each had a 6000-cu-m per hour capacity and was powered by a 220 kw, 6000 V, M-5 electric motor, which was manufactured at the Wroclaw Electric Motor Plant M-5. The compressors were in good condition. The other two gas exhausters were [redacted] constructed in 1955 by Gazobudowa. They were designed to operate under .8 atmospheres of working pressure, but actually operated under about .6 atmospheres of pressure. Each had a 6000-cu-m per hour capacity and was powered by a 220 kw, 6000 V, [redacted] electric motor. Both were in good condition.

50X1-HUM

50X1-HUM

5. Gas holder. This was a 1000-cu-m wet-type gas holder that was part of the Jadwiga Coke Plant. It was about 10 m wide and 10 m high.

6. Mechanical workshop. This was a 1-story, red brick building measuring 25 x 25 x 6 m. It was used to make repairs on machines and to make spare parts for them.

7. Slaking tower. This tower was constructed out of reinforced concrete and red brick. The red brick was on the outside. It was 25 x 7 x 20 m, and its capacity was 35 tons (maximum) of coke each time.

8. Coal crushing building. This was a 5-story, red brick building, measuring 25 x 25 x 20 m, and containing a coal crusher.

9. One-half coke battery. This one-half coke battery was built in 1955 and contained 30 coke ovens.

10. Two overhead coal bunkers. They were of reinforced concrete and measured 15 x 12 x 15 m.

11. Slaking tower. Same as Item 7.

12. Coke battery

13. Chemical building. This was a 1-story red brick building, measuring 25 x 25 x 6 m. It was used by persons who were engaged in removing chemical properties from raw coal gas.

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76

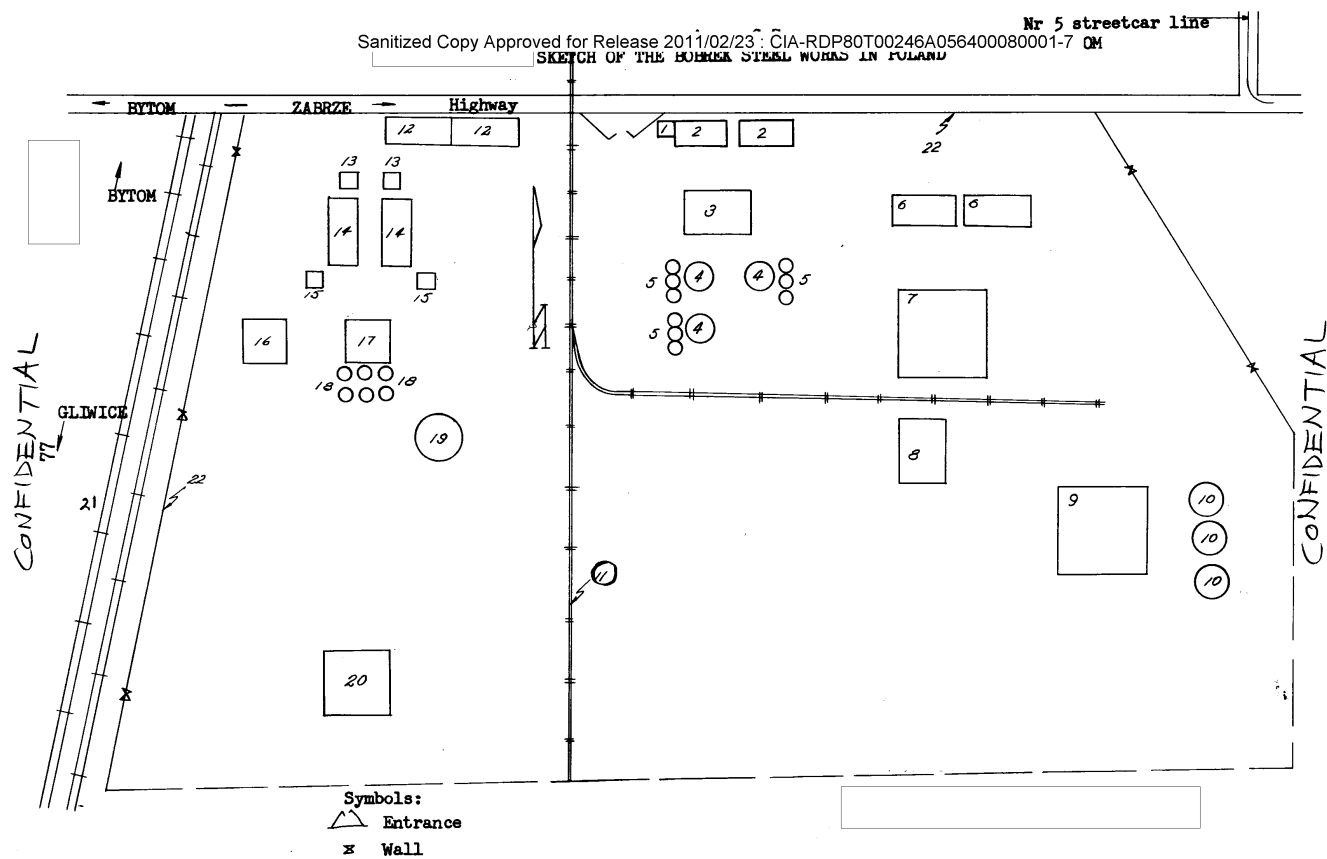
Legend to Annex C-6 (Cont'd)

50X1-HUM

14. Six gas scrub towers.
15. Administrative building and laboratory. This was a 2-story red brick building measuring 20 x 12 x 8 m.
16. Reinforced-concrete fence. It was 2½ m high and had three strands of barbed wire on top.
17. Wire-mesh fence. It was 2½ m high and had three strands of barbed wire on top.
18. Football stadium. It was 150 m long and 80 m wide.
19. Coal Research Institute (Instytut Chemicznej Przerobki Węgla). This institute did all types of research work with coal, and was subordinate to the Ministry of Mining and Power (Ministerstwo Górnictwa i Energetyki - MGE) in WARSAW.
20. Mining School of the Coal Industry (Szkoła Górnicza dla Przemysłu Węglowego).
21. Streetcar line number 5.

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Nr 5 streetcar line
SKETCH OF THE BOHNER STEEL WORKS IN POLAND



50X1-HUM

50X1-HUM

50X1-HUM

CONFIDENTIAL

78

Legend to Annex C-7

50X1-HUM

Annex C-7 shows those major installations subordinate to the Bobrek Steel Works and the one installation (Item 20) that was the Bobrek Compressor Station.

50X1-HUM

1. Entrance building. This was a 1-story, red brick building, 4 x 4 x 3½ m. There were two civilian armed guards here who checked the passes of everyone coming in and going out.
2. Administrative buildings. These were two 3-story stuccoed buildings, measuring 30 x 14 x 12 m.
3. Blast furnace control building. This was a 2-story, red brick building measuring 30 x 16 x 10 m.
4. Three blast furnaces. The reinforced-concrete foundations were about 16 m long and 16 m wide. The blast furnaces were made out of steel and were 35 m high.
5. Nine Cowper stoves. These were 20 m high and 3½ m in diameter.
6. Two Martin open-hearth plants. Two 2-story, red brick buildings, measuring 120 x 25 x 24 m. Each contained five Martin open-hearth furnaces.
7. Bloomery. This was a 1-story, red brick building, measuring 80 x 80 x 20 m.
8. Mechanical workshop. The mechanical workshop was in a 1-story, red brick building, measuring 60 x 20 x 10 m. It was used to make repairs on machines and spare parts for them.
9. Boiler works. This was the boiler works for the steel works. It measured 60 x 50 x 16 m.
10. Three water-cooling towers. They were 20 m high and 14 m in diameter.
11. Railroad spurs, 2-track.
12. Thermoelectric station. This thermoelectric station was part of the steel works. It consisted of two, 1-story, red brick buildings, measuring 75 x 16 x 8 m.
13. Two overhead coal bunkers. These bunkers, measuring 15 x 12 x 15 m, were made out of reinforced concrete.
14. Two coke batteries.
15. Two slaking towers. These slaking towers were made out of reinforced concrete and red brick, red brick on the outside. They were 25 x 7 x 20 m and the capacity of each tower was 35 tons (maximum) each time.
16. Coal crushing building. This was a 5-story red brick building, measuring 25 x 25 x 20 m, containing a coal crusher.
17. Chemical building. This was a 1-story, red brick building, measuring 25 x 25 x 6 m. It was utilized by the chemical section that was responsible for removing chemical properties from the raw coal gas.
18. Six gas scrub towers.
19. Gas holder. This was a wet-type gas holder for raw coal gas. It was 16 m high, 10 m in diameter and its capacity was 1500 cu m.
20. Compressor station. This was a 2-story, red brick building measuring 20 x 18 x 14 m. It contained 2 Aierzner gas exhausters that were constructed in 1941. They were designed

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79



50X1-HUM

Legend to Annex C-7 (Cont'd)

to operate under .8 atmospheres of working pressure, but actually operated under about .4 or .5 atmospheres of pressure. Each had a capacity of 8000 cu m per hour and was powered by a 300 kw, 6000 V  electric motor. These compressors were in fair condition.

50X1-HUM

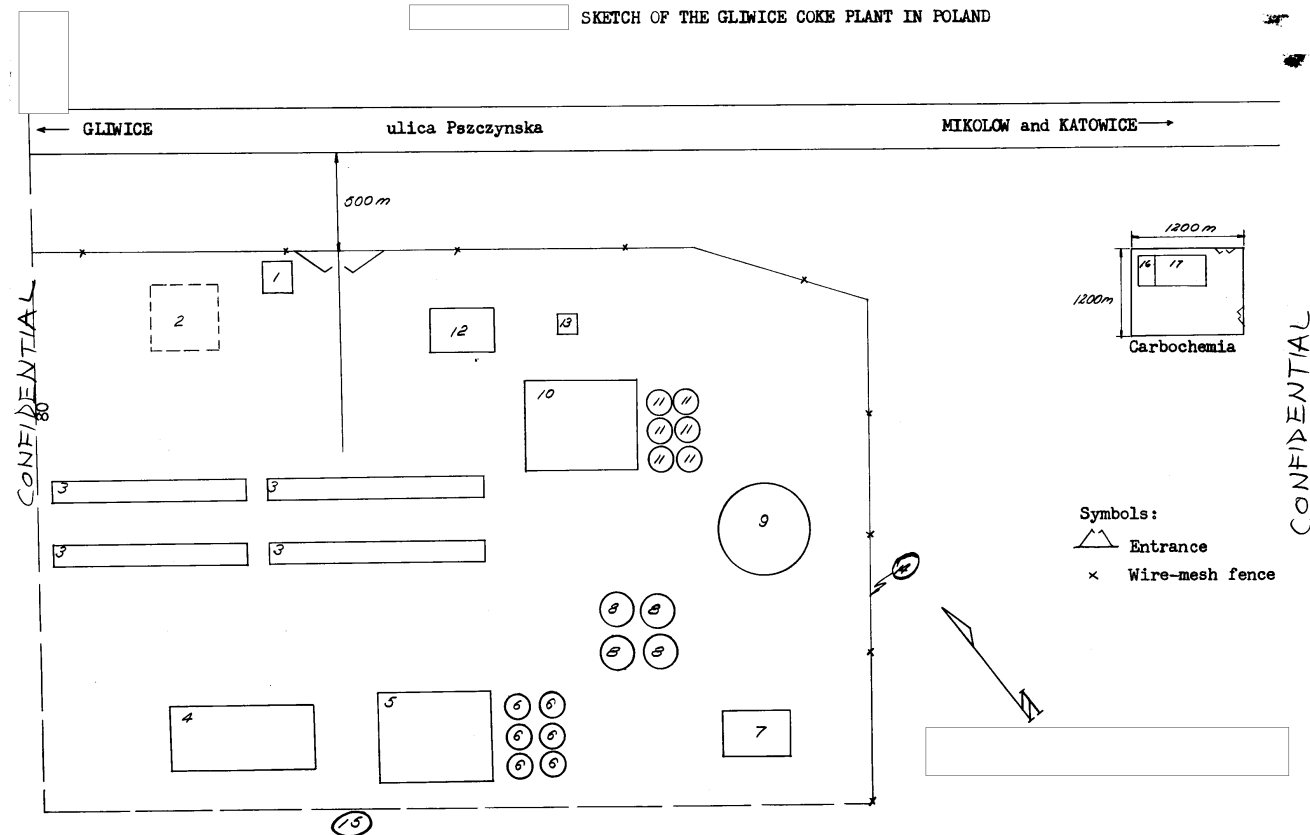
21. Polish State Railroad (Polskie Koleje Panstwowe-PKP). There was also a marshalling yard located alongside the steel works.

22. Reinforced-concrete wall. The steel works was completely enclosed by a 2 $\frac{1}{2}$ -m-high, reinforced-concrete wall that had three strands of barbed wire on top. This area was about 800 m wide and about 2 km long, but only that portion containing the major installations is shown in Annex C-7.

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Annex C-8

SKETCH OF THE GLIWICE COKE PLANT IN POLAND



50X1-HUM

50X1-HUM

50X1-HUM

CONFIDENTIAL
81

50X1-HUM

Legend to Annex C-8

Annex C-8 shows those installations in the Gliwice Coke Plant [redacted] two installations that made up the Gliwice Compressor Station (Items 12 and 13) and two installations that made up the Carbochemia Compressor and Purifying Station (Items 16 and 17). Only that area of the coke plant containing its major installations is shown in Annex C-8.

1. Entrance building. This was a 1-story, red brick building, 4 x 4 x 3½ m. There were two armed civilian guards here who checked the passes of everyone coming in and going out.
2. Administrative building. This was a 3-story, red brick building, measuring 30 x 14 x 12 m. It was under construction the last time Source saw it in January 1959.
3. Four coke batteries
4. Mechanical workshop. This was a 1-story, red brick building, measuring 40 x 15 x 8 m.
5. Old chemical building. This was an old, 1-story, red brick building, measuring 35 x 20 x 8 m.
6. Six gas scrub towers. They were old.
7. Electricity distributing building. This was a 1-story, red brick building, measuring 20 x 10 x 8 m. It contained the transformers of the Gliwice Coke Plant.
8. Four water-cooling towers. They were about 20 m high and 14 m in diameter.
9. Wet-type gas holder. It was 32 m high, 15 m in diameter, and had a capacity of 15,000 cu m. It was used for raw coal gas.
10. New chemical building. One-story, red brick building, measuring 40 x 20 x 10 m. It was utilized by the chemical section that was responsible for removing chemical properties from the raw coal gas.
11. Six gas scrub towers. They were new.
12. Compressor station. This was a 1-story, red brick building, measuring 25 x 16 x 8 m. In the basement of the building was a pumping station, which was used to pump water through the compressors in order to cool them. The station contained one gas exhauster and two compressors.

One compressor was an Austrian, high-pressure, piston type, MAW. It was constructed in 1955 by Gazobudowa and was designed to operate under 4 atmospheres of working pressure, but actually operated under about 3. Its capacity was 6000 cu m per hour and it was powered by a 350 kw, 6000 V, M-5 electric motor. It was in good condition.

The other compressor was a Czechoslovak, high-pressure, piston-type Skoda. It was constructed in 1951 by Gazobudowa and was designed to operate under 4 atmospheres of working pressure but actually operated under about 3. Its capacity was 6000 cu m per hour. It was powered by a 350 kw, 6000 V Czechoslovak electric motor (name unknown), and was in fair condition.

The gas exhauster was a German Lurgi. It was constructed in 1956 by Gazobudowa, and was designed to operate under .8 atmospheres of working pressure, which it actually did. Its capacity was 6000 cu m per hour. It was powered by a 220 kw, 6000 V, [redacted] electric motor. This gas exhauster was in good condition but it froze in 1958 because of too much naphthalene in its pipeline system, and [redacted]

50X1-HUM

50X1-HUM

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CONFIDENTIAL

82

50X1-HUM

Legend to Annex C-8 (Cont'd)

[redacted] this gas exhauster had been causing a lot of trouble since it froze up.

50X1-HUM

13. Oil and grease storage building. This was a 1-story, red brick building, measuring 5 x 5 x 4 m.

14. Reinforced-concrete wall. It was 2½ m high and had three strands of barbed wire on top. It enclosed the coke plant, that was about 1 km long and about ½ km wide.

15. Gliwice Coal Mines. [redacted]
[redacted] about 20,000 tons of coal was taken out of these coal mines every 24 hours.

50X1-HUM

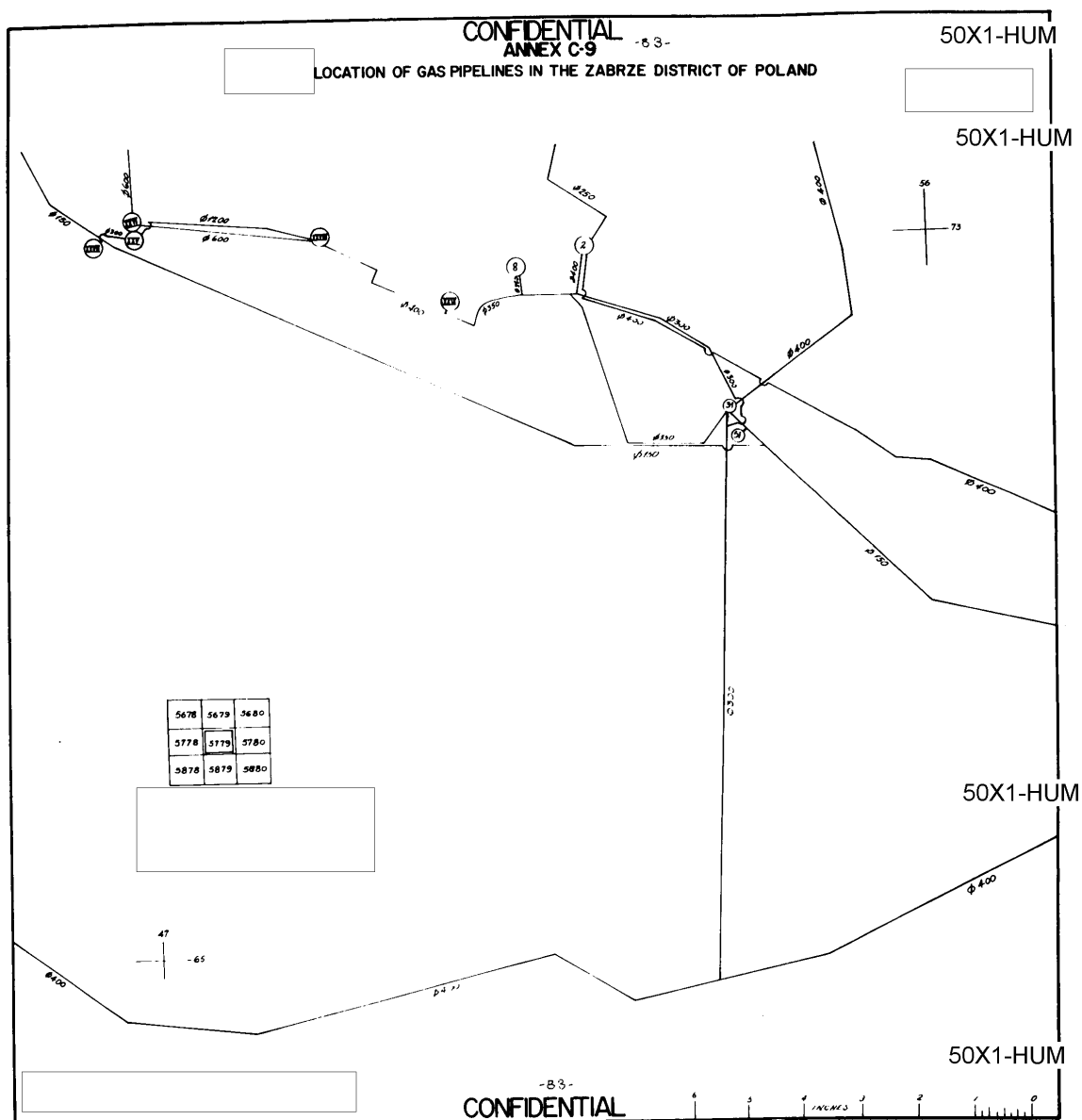
16. Carbochemia Compressor Station. It was located at the Carbochemia Activated Carbon Black Factory (Fabryka Sadzy "Carbochemia"). It was a 2-story, red brick building, measuring 19 x 11 x 11 m, and it contained 2 gas exhausters. One, a German Aernzner gas exhauster, formerly was at the Bobrek Steel Works, but it was dis-assembled and put in operation in the Carbochemia Compressor and Purifying Station in 1947 because it was not needed at the Bobrek Steel Works. This gas exhauster, which was in very bad condition, was designed to operate under .8 atmospheres of working pressure, but actually operated under about .4. Its capacity was 8000 cu m per hour and it was powered by a 6000 V, 300 kw [redacted] electric motor.

50X1-HUM

The other gas exhauster, which was in good condition, was also German. It was constructed in 1956 by Gazobudowa and was designed to operate under .8 atmospheres of working pressure, but it actually operated under about .4. Its capacity was 6000 cu m per hour, and it was operated by a 6000 V, 22 kw, M-5 electric motor.

17. Purifying station. This building, measuring 32 x 11 x 11 m, abutted the compressor station and contained four purifiers, which had a total capacity of 5000 to 6000 cu m per hour. The station used the Bischoff dry method to remove hydrogen sulfide from the gas. It had no crane, and all work was done by hand.

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84

Legend to Annex C-9



50X1-HUM

- XXV. Walenty Coke Plant
- XXVI. Walenty Compressor Station
- XXVII. Mikolaj Thermoelectric Station
- XXVIII. Pokoj Steel Works
- XXIX. Zgoda Steel Works
- 2. Swietochlowice Distributing Station
- 8. Florian Steel Works
- 31. Batory Steel Works
- 51. Hajduki Batory Gas Filling Station

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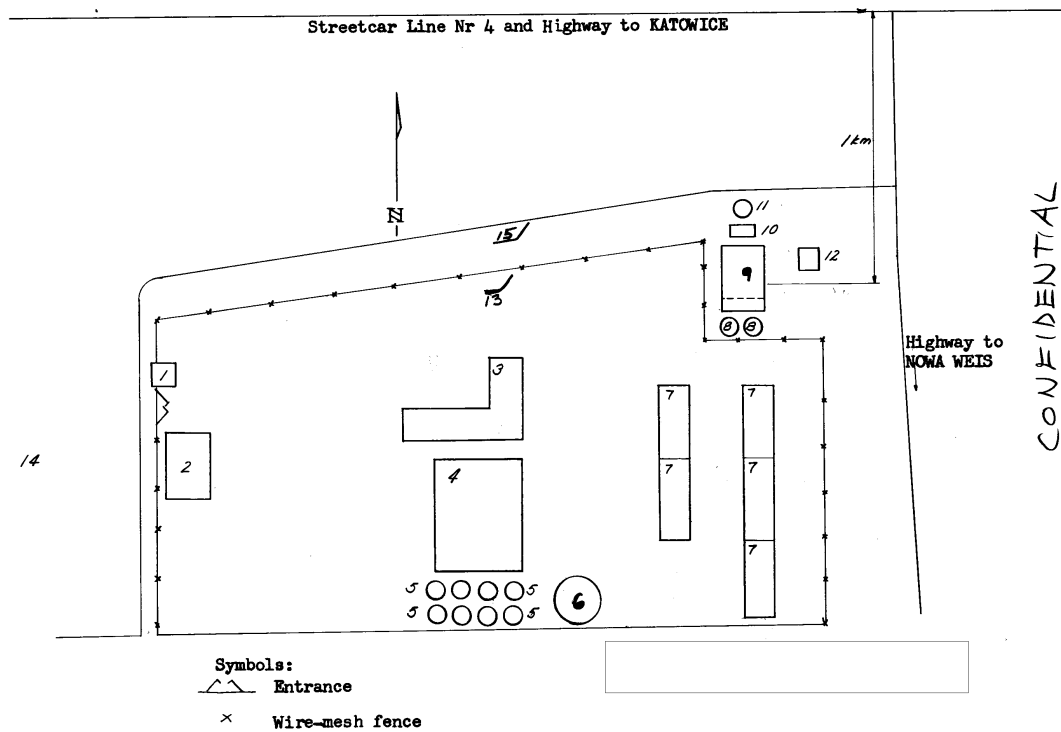
Annex C-10

50X1-HUM

SKETCH OF THE WALENTY COKE PLANT IN POLAND

50X1-HUM

Streetcar Line Nr 4 and Highway to KATOWICE



50X1-HUM

CONFIDENTIAL

86

50X1-HUM

Legend to Annex C-10

Annex C-10 shows those major installations of the Walenty Coke Plant and all installations that were part of the Walenty Compressor Station (Items 8,9,10,11, and 12). Only that area of the coke plant containing the major installations is shown in Annex C-10.

1. Entrance building. This was a 1-story, red brick building, measuring 4 x 4 x 3½ m. There were two armed guards at this building who checked the passes of people coming in and going out.
2. Administrative building and chemical laboratory. It was a 3-story red brick building measuring 25 x 14 x 12 m.
3. Mechanical workshop. It was a 1-story, L-shaped, red brick building, 8 meters high. Its longer side was 35 m long and 10 m wide. The shorter side was 20 m long and 8 m wide.
4. Chemical building. This was a 1-story, red brick building, measuring 40 x 20 x 8 m. It was used by the chemical section that was responsible for removing chemical properties from the raw coal gas.
5. Eight gas scrub towers
6. Gas holder. This was a wet-type raw gas holder, 12 m in diameter and 16 m high. Its capacity was 1500 cu m.
7. Five coke batteries
8. Two old gas scrub towers. These gas scrub towers, each 12 m high and 3 m in diameter, were once used to remove naphthalene from raw coal gas, but, they had not been working for 15 years.

50X1-HUM

9. Compressor station. This was a 2-story building, which was 35 m long, 10 m wide, and 10 m high except a small portion at the end of the building that was 7 m high. Half of the building was stuccoed, and the rest of it was white brick. It contained 5 compressors and 3 gas exhausters:

Two of the gas exhausters were German Aierzner constructed in 1945 by the Pokoj Steel Works. Each was designed to operate under .8 atmospheres of working pressure but actually operated under .6. Each was powered by a 220 kw, 500 V electric motor. One of the gas exhausters had a capacity of 5000 cu m per hour and the other a capacity of 6000 cu m per hour. Both were in poor condition and worked only part time.

There were three Czechoslovak piston-type Vitkowitz compressors constructed in 1951 by Gasobudowa. Each was designed to operate under 1.1 atmospheres of working pressure and actually worked under about 1 atmosphere of pressure. The capacity of each compressor was 3000 cu m per hour, and each was powered by a 120 kw, 500 V electric motor. The compressors were in bad condition because of the heavy load they worked day and night.

One compressor was a Czechoslovak, piston-type, high-pressure Skoda compressor, which was constructed in 1955 by Gasobudowa. It was designed to operate under 4 atmospheres of working pressure, but actually operated under about 1½ atmospheres. Its capacity was 6000 cu m per hour, and it was powered by a 6000 V, 350 kw, Skoda electric motor. It was in good condition.

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87

50X1-HUM

Legend to Annex C-10 (Cont'd)

One German Aierzner gas exhauster was constructed in 1945 by the Pokoj Steel Works. Its capacity was 10,000 cu m per hour and it was designed to, and operated under .6 atmospheres of working pressure. It was powered by a [] 360 kw, 6000 V electric motor, and was in bad condition.

50X1-HUM

Also in use was one Polish, high-pressure, piston-type DKL compressor, manufactured at the Szatkowski Machine Plant (Zaklady Mechaniczne Im. Szatkowskiego) in KRAKOW. This compressor, which was in good condition, was constructed in February 1959 by Gazobudowa. It was designed to operate under 4 atmospheres of working pressure, but it actually operated under about 1½ atmospheres of pressure. Its capacity was 6000 cu m per hour, and it was powered by a 6000 V, 350 kw, M-5 electric motor.

10. Pumping station. This was a 1-story, stuccoed building, measuring 8 x 5 x 3½ m. The pumps in it were used to pump water into the compressors in order to cool them.

11. Water-cooling tower. This tower was 16 m high and 7 m in diameter at the base.

12. Oil supply building. This was a 1-story, red brick building, measuring 4 x 4 x 3½ m.

13. Wire-mesh fence. This fence was 2½ m high and had 3 strands of barbed wire on top. It completely enclosed the Walenty Coke Plant. [] the coke plant was about 800 m wide and about 1 km long.

50X1-HUM

14. Walenty-Wawel Coal Mine

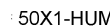
15. Cobblestone road.

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50X1-HUM

1

79



CONFIDENTIAL

89

50X1-HUM

Legend to Annex C-11

Annex C-11 shows all installations subordinate to the Kosciuszko Compressor Station (Items 13, 14, 15, 16 and 17), and those major installations subordinate to the Kosciuszko Steel Works. The Kosciuszko Steel Works was about 1 km wide across the front and about $1\frac{1}{2}$ km long.

50X1-HUM

1. Entrance building. This was a 1-story, red brick building, measuring 5 x 5 x 4 m. There were two armed civilian guards on duty here who checked the passes of the people coming in and going out of the steel works. They were dressed in special uniforms.
2. Martin open-hearth plant. This was a 2-story, red brick building, measuring 150 x 30 x 18 m. It contained about 9 Martin open-hearth furnaces.
3. Bloomery and rolling mill. This was a 1-story, red brick building, measuring 100 x 50 x 14 m.
4. Steam boiler plant. This was a 2-story, red brick building, measuring 35 x 35 x 20 m.
5. Two blast furnaces. These two blast furnaces were like those at the Bobrek Steel Works.
6. Nine Cowper stoves. These nine Cowper stoves were like those at the Bobrek Steel Works.
7. Three coke batteries.
8. Chemical building. This was a 1-story, red brick building, measuring 30 x 30 x 8 m. The people working in this building removed chemical properties from raw coal gas.
9. Six gas scrub towers
10. Sintering plant. This was a 4-story, red brick building, measuring 35 x 20 x 16 m.
11. Reinforced-concrete fence. This fence was $2\frac{1}{2}$ m high and had 3 strands of barbed wire on top.
12. Wire-mesh fence. It was $2\frac{1}{2}$ m high and had 3 strands of barbed wire on top.
13. Entrance building. This was the entrance building to the Kosciuszko Compressor Station. It was 1-story, red brick, and measured $4\frac{1}{2}$ x $4\frac{1}{2}$ x $3\frac{1}{2}$ m. There was one, unarmed civilian guard in special uniform on duty at this building, who checked the passes of everyone coming in and going out of the compressor station.
14. Compressor station. This was a 2-story, red brick building, measuring 40 x 15 x 14 m. It contained 2 transformers which reduced 6000 V to 220 V and 380 V, so it could be used for lighting and small motors at the compressor station; 3 compressors; and one gas exhauster:

Two of the compressors were Czechoslovak, high-pressure, piston-type Skoda, constructed in 1953 by Gazobudowa. Each compressor was designed to operate under 4 atmospheres of working pressure but actually operated under about 3. Both were powered by a 350 kw, 6000 V electric motor and were in good condition.

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
90



50X1-HUM

Legend to Annex C-11 (cont'd)

The third compressor was a German high-pressure, piston type (name unknown). It was constructed in 1956 by Gazobudowa, and was designed to operate under 4 atmospheres of working pressure but actually operated under about 3. Its capacity was 8000 cu m per hour, and it was powered by a 660 kw, 600 V electric motor. It was in good condition.

The gas exhaustor was a German Aertzner constructed at the Kosciuszko Compressor Station in 1956 by Gazobudowa. It was old and had previously been in operation at the Zaborze Compressor Station. It was designed to operate under .4 atmospheres of working pressure, and actually operated under between .3 and .4 atmospheres of pressure. Its capacity was 5500 cu m per hour, and it was powered by a  90 kw, 220/380 V electric motor. It was in fair condition.

50X1-HUM

17. Raw gas holder. This was a MAN dry-type, raw gas holder. It was 40 m in diameter and 60 m high, and its capacity was 60,000 cu m.

18. Konstal Coach Factory. This factory consisted of 7 or 8 red brick buildings.

19. Red brick fence. This fence was 4 m high, and there was no barbed wire on top.

20. Cobblestone road

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Annex C-12

SKETCH OF THE KNUROW COKE PLANT IN POLAND

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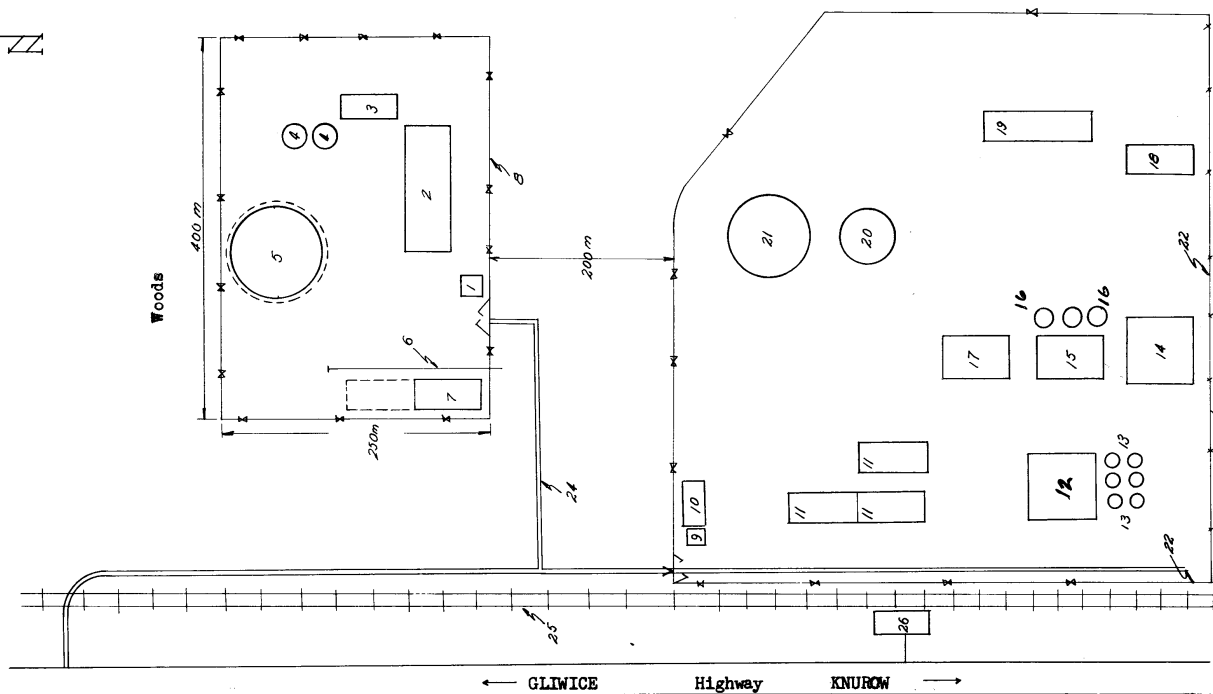
50X1-HUM

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16



Symbols

X Wall

X Wire-mesh fence

 Entrance

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92

50X1-HUM

Legend to Annex C-12

Annex C-12 shows those major installations subordinate to the Knurów Coke Plant [] and all installations subordinate to the Knurów Compressor and Purifying Station (Items 1,2,3,4,5, and 7). [] the coke plant was about 1.5 km long and about 1.8 m wide across the front.

50X1-HUM

1. Entrance building. This was a 1-story, red brick building, measuring 4 x 4 x 4 m. There was an unarmed civilian guard at this building who checked the passes of every one coming in and going out of the station.

2. Compressor station. It was a 2-story, red brick building, measuring 55 x 22 x 12 m. The basement of the building contained a pumping unit used to pump water through the compressors in order to cool them. At one end of the building on the first floor was a small mechanical workshop and two transformers that reduced 6000 V to 220/380 V. The building contained the following compressors and gas exhausters:

One Czechoslovak high-pressure, piston-type Skoda compressor, which was constructed in 1953 by Gazobudowa. It was designed to operate under 4 atmospheres of working pressure and actually did. Its capacity was 6000 cu m per hour. It was powered by a Czechoslovak 6000 V, 350 kw Skoda electric motor, and it was in good condition. This compressor was not needed, so it was going to be sent to the Walenty Coke Plant.

Two East German high-pressure, piston-type KS compressors. Both compressors were constructed in 1954 by Gazobudowa, and each had a capacity of 5000 cu m per hour. Each was designed to operate under 8 atmospheres of working pressure, but actually operated under about 5 atmospheres of pressure, and was powered by a 6000 V, 380 kw Sachsenwerk electric motor. The electric motors were obtained from SACHSEN, East Germany, firm unknown. Both compressors were in good condition.

Two Czechoslovak high-pressure, turbine-type Skoda compressors. Each was supposed to have a capacity of 20,000 cu m per hour, but actual capacity was 16,500 cu m per hour. Each was designed to operate under 8 atmospheres of working pressure, but actually operated under 5 atmospheres of working pressure, and was powered by a Czechoslovak 6000 V, 250 kw Skoda electric motor. One of the compressors was constructed in 1954 by Gazobudowa and was in fair condition. The other compressor was constructed in 1956 by Gazobudowa and was in good condition. It was not operating [] because a part was needed to replace an old one which broke.

50X1-HUM

There was one East German turbine-type Jaeger gas exhauster, constructed in 1952 by Gazobudowa. It was designed to operate under .2 atmospheres of working pressure, but actually operated under about .1 atmospheres of pressure, and was powered by a German 6000 V, 200 kw East German Siemens electric motor. Its capacity was 25,000 cu m per hour, and it was in good condition. [] this station had received two additional gas exhausters in 1958, but they could not be used because they were the type for blast furnace gas. [] it was discovered that coal gas escapes from this type gas exhauster, which was very dangerous because of the possibility of fire and of asphyxiation of workers.

50X1-HUM

50X1-HUM

3. Boiler works. This was a 1-story, red brick building, measuring 11 x 9 x 4½ m. It contained 2 steam boilers. The steam produced by the boilers was used to heat the installations of the Knurów Compressor and Purifying Station, and to heat and moisten the bog iron ore in the purifiers at the purifying station.

4. Two water-cooling towers. They were 20 m high and 20 m in diameter.

5. Planned gas holder. [] there was a plan to construct a MAN dry-type, 150,000 cu m gas holder at the station in 1959. It will be 100 m high and 50 m in diameter.

50X1-HUM

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93

50X1-HUM

Legend to Annex C-12 (Cont'd)

6. Railroad spur. From the KNUROW-ZABRZE Railroad Line, that transported bog iron ore, equipment and supplies to the Knurow Compressor and Purifying Station.

7. Purifying station. This was a 1-story, stuccoed building, measuring 60 x 15 x 12 m. It contained 6 purifiers, that removed hydrogen sulfide from the gas by the Bischoff dry method. The capacity of all 6 purifiers was 26,000 cu m per hour.

There was also a 1½ ton, overhead electric traveling crane in the building. The condition of this station was good. [redacted] there was a plan to build four more purifiers so as to increase the capacity of the purifying station to 50,000 cu m per hour [redacted]

50X1-HUM

50X1-HUM

8. Reinforced-concrete wall. This wall was 2½ m high and had three strands of barbed wire on top.

9. Entrance building. This was the entrance building to the Knurow Coke Plant. Its dimensions were 4 x 4 x 3½ m. There were two civilian armed guards here who checked everyone coming in or going out of the Knurow Coke Plant.

10. Administrative building. It was a 3-story, red brick building, measuring 25 x 15 x 12 m. It contained the administrative offices of the Knurow Coke Plant.

11. Three coke batteries.

12. Chemical building. This was a 1-story, red brick building, measuring 22 x 18 x 10 m. It was used by the chemical section that was responsible for removing chemical properties from raw coal gas.

13. Six gas scrub towers.

14. Compressor building. This was a 1-story, red brick building, measuring 20 x 20 x 10 m. There were two compressors (type unknown) in this building.

15. Chemical building. This was a 1-story, red brick building, measuring 25 x 18 x 10 m. Synthetic ammonia was produced here. The workers in the building removed chemical properties from raw coal gas.

16. Three gas scrub towers. These gas scrub towers were 1½ m in diameter and 25 m high. They were used to remove hydrogen from the gas.

17. Oxygen factory. It was a 1-story, red brick building, measuring 22 x 15 x 8 m. Oxygen was produced here (amount unknown).

18. Mechanical workshop. It was a 1-story, red brick building, measuring 30 x 12 x 7 m.

19. Garage. It was a 1-story, red brick building, measuring 30 x 20 x 5 m.

20. Gas holder. This was a wet-type gas holder. It was 15 m high and 8 m in diameter. Its capacity was 5000 cu m.

21. Gas holder. This was another wet-type gas holder. Its capacity was 15,000 cu m, and it was 30 m high and 20 m in diameter.

22. Reinforced-concrete wall. This wall was 2½ meters high and had three strands of barbed wire on top.

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50X1-HUM

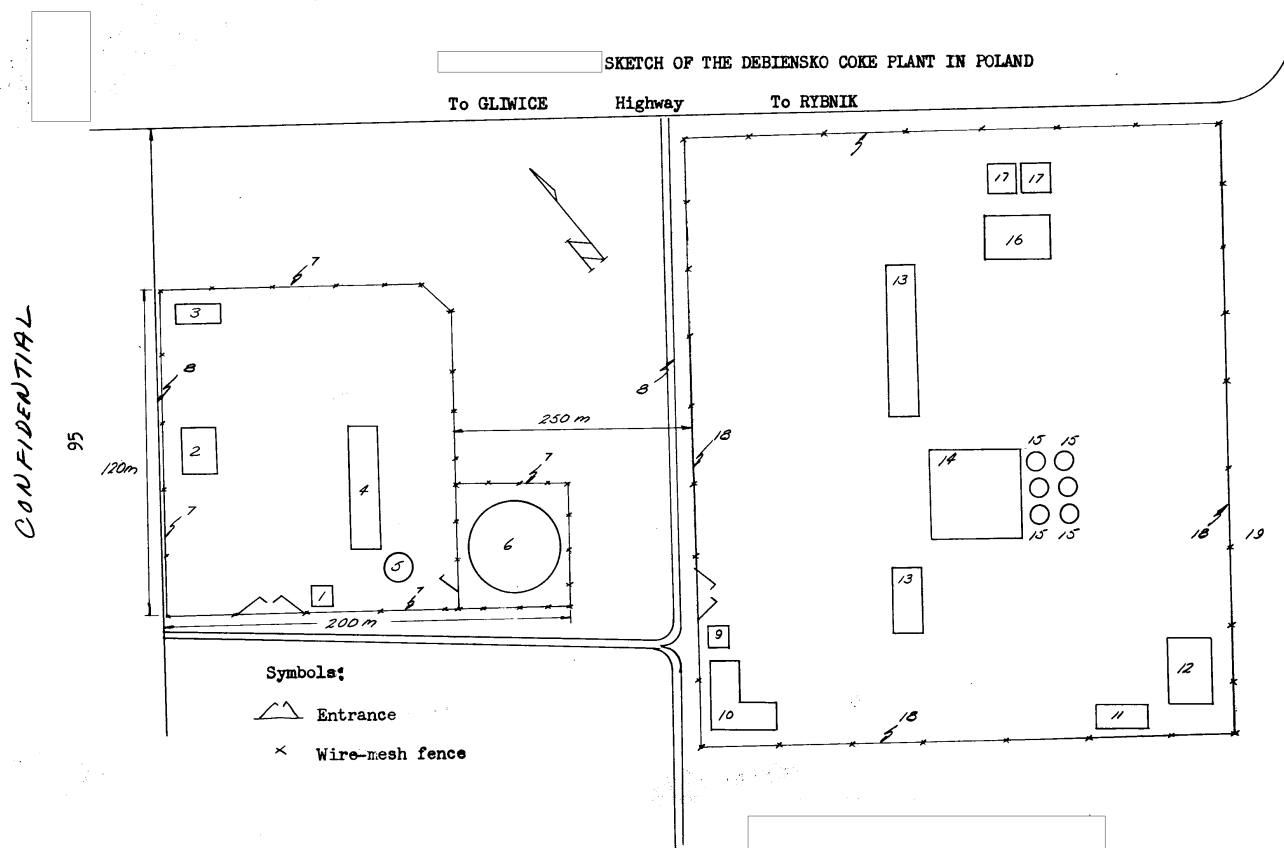
94



Legend to Annex C-12 (Cont'd)

- 23. Knurow Coal Mine.
- 24. Macadam Road (type unknown). It led to the compressor and purifying station and the coke plant.
- 25. KNUROW-ZABRZE railroad line.
- 26. Knurow Railroad Station. This was a 2-story, red brick building, measuring 40 x 14 x 10 m.

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50X1-HUM

50X1-HUM

50X1-HUM

CONFIDENTIAL

50X1-HUM

96

Legend to Annex C-13

Annex C-13 shows those major installations subordinate to the Debienko Coke Plant and all installations subordinate to the Debienko Compressor Station. (Items 1, 2, 3, 4, 5, and 6). [redacted] the Debienko Coke Plant was about one kilometer wide and $1\frac{1}{2}$ kilometers long.

50X1-HUM

1. Entrance building. This was a 1-story, red brick building, measuring $3\frac{1}{2} \times 3\frac{1}{2} \times 3\frac{1}{2}$ m. There was one armed civilian guard here who checked the passes of people coming in and going out of the station.
2. Boiler works. This was a 1-story, red brick building, measuring $12 \times 8 \times 10$ m. Steam from the boiler works heated the gas holder and buildings of the Debienko Compressor Station.
3. Storage building. This was a 1-story, red brick building, measuring $10 \times 4 \times 4$ m, that was used to store oil and grease.
4. Compressor station. This was a 2-story, red brick building, measuring $25 \times 15 \times 14$ m. The basement of the building contained a pumping station and an air raid shelter. The pumping station pumped water through the compressors to cool them. In the building were two transformers and three compressors. The transformers reduced 6000 V to 220/380 V so it could be used for small motors and lighting. The compressors were Polish piston-type, high-pressure Wabag, which had been manufactured at the Szatkowski Machine Plant in KRAKOW, and constructed at the Debienko Compressor Station by Gazobudowa in 1955. Each compressor was designed to operate under $3\frac{1}{2}$ atmospheres of working pressure, but actually operated under about 3 atmospheres of pressure, and was powered by a Polish 6000 V, 340 kw, M-5 electric motor. The capacity of each compressor was 4000 cu m per hour, and they were all in good condition.
5. Water-cooling tower. This tower was 20 m high and 7 m wide at the foundation.
6. Gas holder. This was a wet-type gas holder, constructed in 1957 by Gazobudowa. Its capacity was 15,000 cu m, and it was in good condition.
7. Wire-mesh fence. This fence was $2\frac{1}{2}$ m high and had three strands of barbed wire on top.
8. Dirt road.
9. Entrance building. This was the entrance building for the coke plant. It was 1-story, red brick, and measured $4 \times 4 \times 3\frac{1}{2}$ m. There were two armed civilian guards here who checked the passes of people coming in and going out.
10. Administrative building and laboratory. This was a 2-story, L-shaped, red brick building, 20 m long on both sides, 14 m wide and 9 m high.
11. Garage. This was a 1-story, red brick building, measuring $20 \times 10 \times 5$ m.
12. Mechanical workshop. This was a 1-story, red brick building, measuring $15 \times 10 \times 8$ m. The building was used to make repairs on machines and to make replacement parts for them.
13. One and one-half coke batteries.
14. Chemical building. This was a 1-story, red brick building, measuring $22 \times 22 \times 8$ m. The people working here removed chemical properties from raw coal gas.

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97



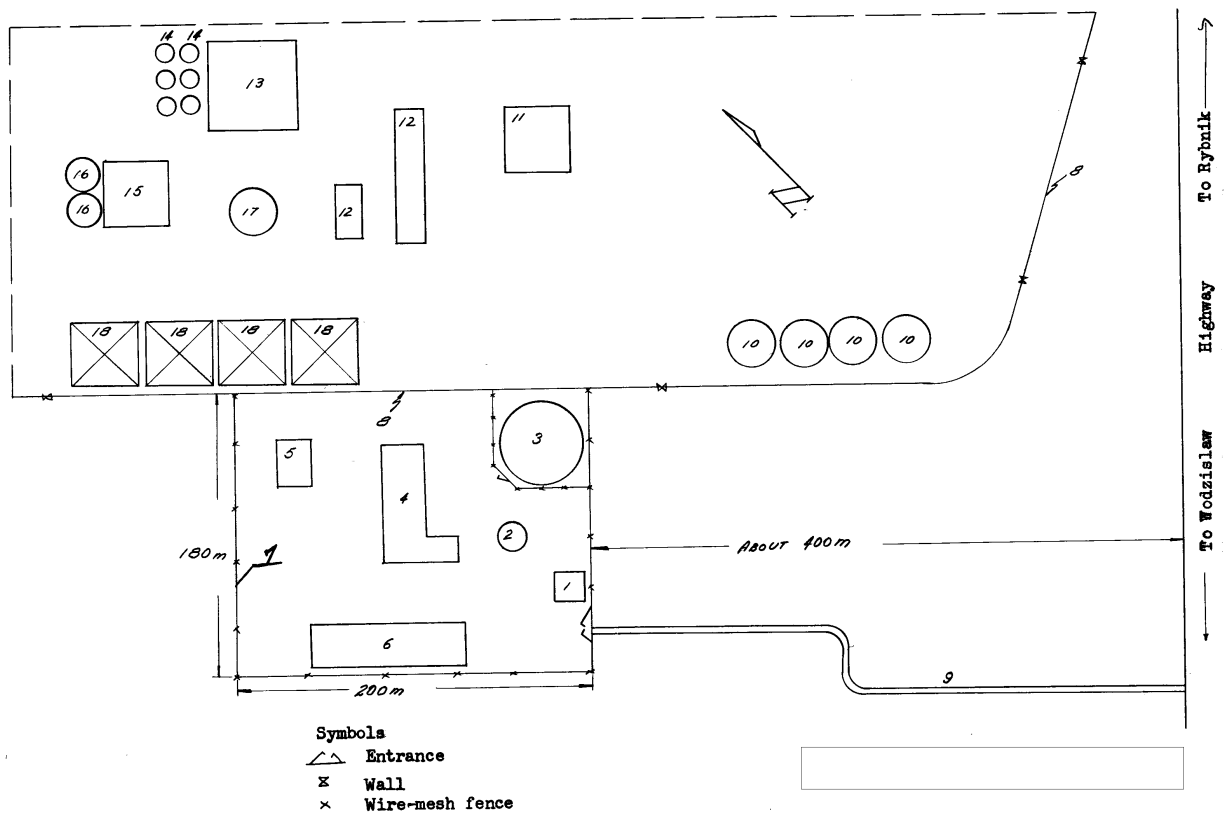
Legend to Annex C-13 (Cont'd)

15. Six gas scrub towers.
16. Coal crushing building. This was a 5-story, red brick building, measuring 25 x 25 x 20 m. It contained a coal crusher.
17. Two overhead coal bunkers. Each was of reinforced concrete, and measured 15 x 15 x 20 m.
18. Wire-mesh fence. It was $2\frac{1}{2}$ m high and had three strands of barbed wire on top.
19. Debiensko Coal Mine.

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98



CONFIDENTIAL

50X1-HUM

99

Legend to Annex C-14

Annex C-14 shows those major installations subordinate to the Emma Coke Plant [redacted] and all installations subordinate to the Radlin Compressor and Purifying Station (Items 1 through 6). The Emma Coke Plant was about 1.2 kilometers wide and about $1\frac{1}{2}$ kilometers long, but only that area of the coke plant containing the major installations is shown in Annex C-14.

1. Entrance building. This was a 1-story, red brick building, measuring 4 x 4 x 4 m. There was one unarmed civilian guard here who checked all persons coming in and going out of the station.
2. Water-cooling tower. It was 15 m high and 8 m in diameter.
3. Gas holder. This was a wet-type gas holder with a capacity of 15,000 cu m. It was constructed in 1956 by Gazobudowa and was in good condition.
4. Compressor station. This was a 2-story, red brick building, measuring 35 x 16 x 11 m. The basement contained a pumping unit that pumped water through the compressors to cool them. On the first floor, at one end, were 2 transformers, which reduced 6000 V to 220/380 V. The building contained the following compressors and gas exhausters:

Two, Polish, high-pressure, piston-type Wabag compressors, which were manufactured in the Szatkowski Machine Construction Plant in KRAKOW and were constructed at the Radlin Compressor and Purifying Station in 1954. Each compressor was designed to operate under $3\frac{1}{2}$ atmospheres of working pressure, but actually operated under about $2\frac{1}{2}$ atmospheres of pressure, had a capacity of 4000 cu m per hour, and was powered by a Polish 6000 V, 340 kw, M-5 electric motor. Both compressors were in good condition.

50X1-HUM

One Polish, high-pressure, piston-type DLK (meaning of DLK unknown) compressor. It was also manufactured in the Szatkowski Machine Construction Plant in KRAKOW. It was being constructed by the Gazobudowa [redacted] and was scheduled to be finished in 1959. It was designed to operate under 4 atmospheres of working pressure, its capacity was 6000 cu m per hour, and it was to be powered by a Polish 6000 V, 350 kw, M-5 electric motor.

Three East German Aierzner-type gas exhausters. These were all constructed in 1954 by Gazobudowa. Each was designed to operate under $\frac{1}{4}$ atmospheres of working pressure, actually operated under about .1 atmospheres of pressure, had a 6000 cu m per hour capacity, and was powered by an East German 220/380 V, 60 kw Sachsenwerk electric motor. They were all in good condition.

There was no crane in this building for making repairs on the compressors, but a 15-ton overhead traveling crane was to be built there in 1960.

5. Showers and wash room. This was a 1-story, red brick building, measuring 10 x 7 x $4\frac{1}{2}$ m.
6. Purifying station. This was a 1-story, red brick building, measuring 60 x 12 x 11 m. It contained 6 purifiers, that removed hydrogen sulfide from the gas by the Bischoff dry method. The capacity of the station was 15,000 cu m per hour, and all work there was done by hand.
7. Wire-mesh fence. It was $2\frac{1}{2}$ m high and had three strands of barbed wire on top.
8. Reinforced-concrete wall. It was $2\frac{1}{2}$ m high and had three strands of barbed wire on top.

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50X1-HUM

100

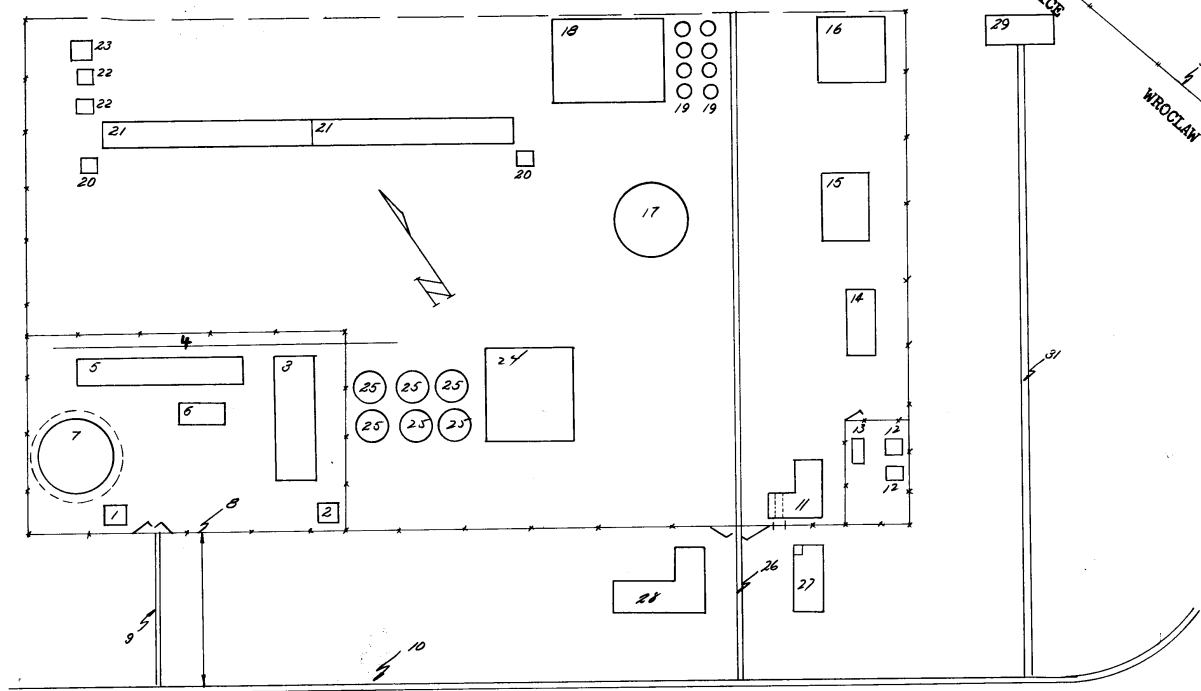


Legend to Annex C-14 (Cont'd)

9. Macadam road to compressor and purifying station.
10. Four receptacles for benzol. They were cylindrical in shape and were made out of steel. Each receptacle was inside a second reinforced-concrete container for purposes of safety.
11. Boiler works. This was a 1-story, red brick building, measuring 35 x 30 x 10 m.
12. One and one-half coke batteries.
13. Chemical building. This was a 1-story, red brick building, measuring 35 x 30 x 8 m. The workers there removed chemical properties from raw coal gas.
14. Six gas scrub towers.
15. Coal tar distillation building. It was a 1-story, red brick building, measuring 30 x 30 x 15 m, and it contained retort furnaces (number unknown).
16. Two coal tar distillation towers. These were 25 m high and $3\frac{1}{2}$ m in diameter.
17. Gas holder. It was a 1000 cu m wet-type gas holder and was 16 m high and 16 m in diameter.
18. Four concrete receptacles. They were 25 x 25 x $2\frac{1}{2}$ m and were used for coal tar pitch.

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SKETCH OF THE ZDZIESZOWICE COKE PLANT IN POLAND



Symbols

Entrance

x Wire-mesh fence

CONFIDENTIAL

101

50X1-HUM

50X1-HUM

CONFIDENTIAL

50X1-HUM

CONFIDENTIAL

50X1-HUM

102

Legend to Annex C-15

Annex C-15 shows all installations subordinate to the Zdzieszowice Compressor and Purifying Station (Items 1, 2, 3, 5, 6, and 7) and those major installations subordinate to the Zdzieszowice Coke Plant [redacted] Only that area of the coke plant containing the major installations is shown in Annex C-15. [redacted] the Zdzieszowice Coke Plant was about $1\frac{1}{2}$ kilometers wide and about $3\frac{1}{2}$ kilometers long. 50X1-HUM

1. Entrance building. This was a 1-story, red brick building, measuring 5 x 4 x 3 m. There was one unarmed civilian guard who checked the passes of all persons coming in and going out of the station.

2. Warehouse for oils and grease. This was a 1-story, red brick building, measuring 6 x 5 x 5 m.

3. Compressor station. It was a 2-story, red brick building, measuring 55 x 15 x 13 m. In the basement of the building was a pumping station, which was used to pump water through the compressors to keep them cool. The following six high-pressure compressors and three gas exhausters were in the station:

Four Polish Wabag high-pressure, piston-type compressors, that were manufactured at the Szatkowski Machine Construction Plant in KRAKOW. They were constructed at the Zdzieszowice Compressor and Purifying Station by Gazobudowa in 1951. Each was designed to operate under $3\frac{1}{2}$ atmospheres of working pressure and actually did operate under that much pressure. The capacity of each compressor was 4000 cu m per hour, and all four were powered by a 6000 V, 340 kw, Polish M-5 electric motor.

Two East German KS (meaning of KS unknown) high-pressure, piston-type compressors, which were constructed in 1956 by Gazobudowa. Each was designed to operate under 4 atmospheres of working pressure, but actually operated under about $3\frac{1}{2}$ atmospheres of pressure, and each had a capacity of 8000 cu m per hour. Both were powered by a 6000 V, 660 kw, East German Sachsenwerk electric motor, and both compressors were in good condition. 50X1-HUM

One [redacted] gas exhauster, which was received [redacted] in 1945. It was constructed at the Zdzieszowice Compressor and Purifying Station in 1951. It was designed to operate under .4 atmospheres of working pressure, but actually operated under about .1 atmospheres of pressure. Its capacity was 10,000 cu m per hour, and it was powered by [redacted] electric motor (name unknown). The gas exhauster was in fair condition. 50X1-HUM

One Czechoslovak gas exhauster, which was constructed in 1952 by Gazobudowa. It was designed to operate under .3 atmospheres of working pressure, but actually operated under about .1 atmospheres of pressure. Its capacity was 8000 cu m per hour, and it was powered by a 220/380 V, 65 kw Skoda electric motor. It was in good condition.

One Jaeger East German-type gas exhauster, constructed by Gazobudowa in 1955. It was designed to operate under .4 atmospheres of working pressure, but actually operated under about .1 atmospheres of pressure. Its capacity was 6000 cu m per hour. It was powered by a 220/380 V, 65 kw Sachsenwerk electric motor and was in good condition.

In the building there was also a 15-ton, hand-operated, overhead traveling crane, which was used to make repairs on the compressors and gas exhausters.

4. Railroad spur from the Gliwice - Wroclaw Railroad.

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50X1-HUM

103

Legend to Annex C-15 (Cont'd)

5. Purifying station. This was a 1-story, red brick building, measuring 60 x 12 x 11 m. There were six purifiers in this building with a total capacity of 17,000 cu m per hour. The purifiers removed hydrogen sulfide from the gas by the Bischoff dry method.

50X1-HUM

four more purifiers were to go into operation at this station in 1960. This would increase the capacity of the purifying station to about 35,000 cu m per hour. In the station there also was a chemical laboratory, which was used to check the quality of the gas received from the Zdzeszowice Coke Plant. A 1.5-ton overhead electric traveling crane was also in operation at the station.

6. Station workshop. This was a 1-story, red brick building, measuring 10 x 7 x 4 m.

7. Gas holder. This gas holder was under construction. Its capacity will be 20,000 cu m per hour, and it will be 26 m high and 30 m in diameter.

it would be finished in 1960.

50X1-HUM

8. Wire-mesh fence. It was 2½ m high and had three strands of barbed wire on top.

9. Cobblestone road.

10. Highway. It was between KOZLE and KEDZIERZYN.

11. Entrance building. This building was L-shaped; the longest side was 8 m long and 5 m wide. The shortest side was 6 m long and 5 m wide. The whole building was 4 m high. There were two armed civilian guards here who checked the passes of all persons coming in and going out of the coke plant.

12. Two transformers. These were out in the open. They reduced the 60,000 V coming into the coke plant to 6000 V.

13. Power building. It contained switches and measuring instruments for electricity.

14. Parts warehouse. It was a 1-story, red brick building, measuring 40 x 12 x 5 m.

15. Administrative building. It was a 1-story, red brick building, measuring 40 x 18 x 8 m.

16. Mechanical workshop. It was a 1-story, red brick building, measuring 25 x 20 x 8 m.

17. Gas holder. This was a wet-type gas holder. It was 25 m in diameter and 16 m high, and its capacity was 5000 cu m.

18. Chemical building. It was a 1-story, red brick building, measuring 40 x 25 x 8 m.

19. Eight gas scrub towers.

20. Two slaking towers, measuring 25 x 7 x 20 m. The capacity of each tower was 35 tons (maximum) each time.

21. Two coke batteries.

22. Two overhead coal bunkers. They were of reinforced concrete and measured 20 x 15 x 15 m.

23. Coal-crushing building. It was a 5-story, red brick building, measuring 25 x 25 x 20 m. It contained a coal crusher.

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50X1-HUM

104



Legend to Annex C-15 (Cont'd)

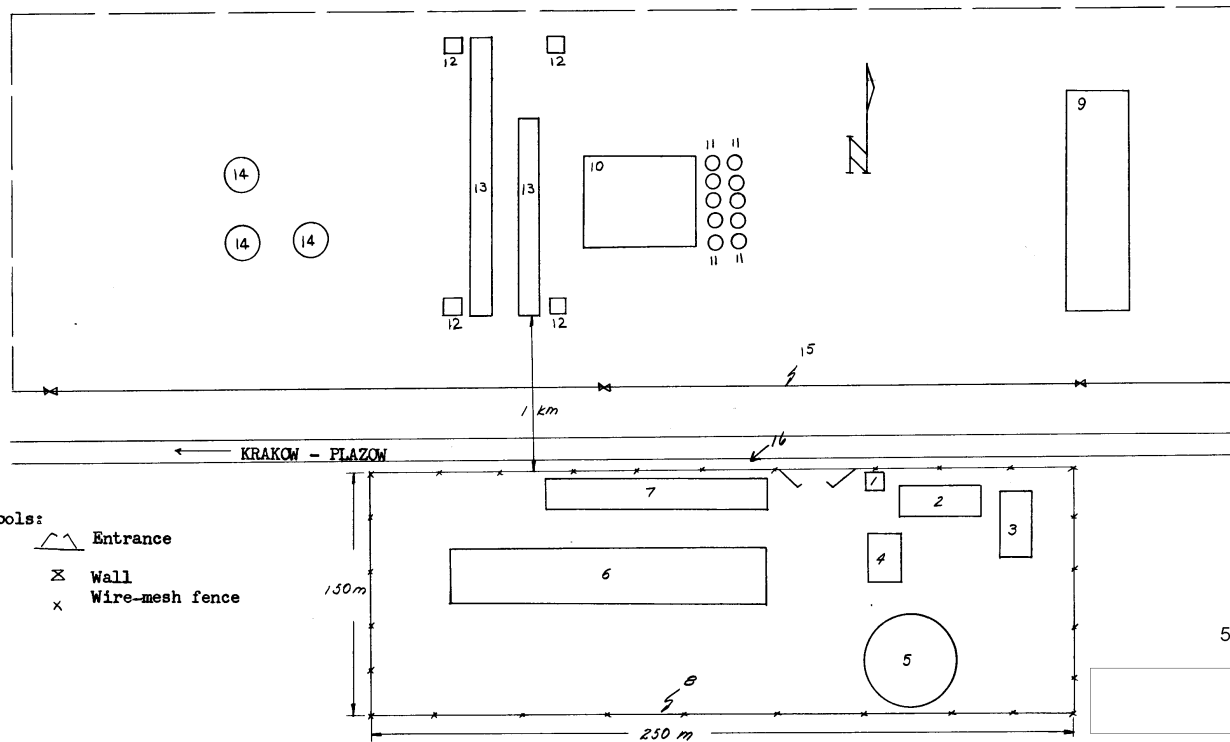
24. Thermoelectric station. It was a 2-story, red brick building, measuring 60 x 40 x 16 m.
25. Six water-cooling towers. They were 40 m in diameter and 30 m high.
26. Macadam road. (type unknown).
27. Fire station. It was a 1-story, red brick building, 40 m long and 12 m wide, with a tower, 8 m high, at one corner of the building, which was used as a lookout post for fires.
28. Movie, dining room, and club room. It was a 2-story, L-shaped, red brick building.
29. Zdzieszowice Railroad Station (PKP). It was a 2-story, red brick building, measuring 35 x 15 x 10 m.
30. Two-track railroad line.
31. Macadam road (type unknown).

CONFIDENTIAL

SKETCH OF THE LENIN STEEL WORKS IN POLAND

50X1-HUM

50X1-HUM



CONFIDENTIAL
105

CONFIDENTIAL

50X1-HUM

CONFIDENTIAL

50X1-HUM

106

Legend to Annex C-16

50X1-HUM

Annex C-16 shows those major installations subordinate to the Lenin Steel Works and were related to the production of coal gas. It also shows those installations that were part of the Krakow Compressor and Purifying Station. (Items 1 through 7). [redacted] the Lenin Steel Works was about 4 kilometers long and 2½ kilometers wide, but only part of it is shown in Annex C-16.

50X1-HUM

1. Entrance building. This was a 1-story, stuccoed building, measuring 3 x 3 x 3½ m. There was one armed guard here who checked the passes of all persons coming in and going out of the station.

2. Living quarters and administrative building. This was a 2-story, stuccoed building, measuring 20 x 12 x 8 m. On the first floor were the administrative offices of the Krakow Compressor and Purifying Station. On the second floor were two apartments. One was occupied by the boss of the compressor and purifying station, the other by the chief electrician.

3. Electrical distributing building. It was a 1-story, stuccoed building, measuring 16 x 6 x 6 m. In the building were two transformers. One transformer reduced the 15,000 V coming into the building to 6000 V so it could be used by compressor motors; and the other reduced 15,000 V to 220/380 V. The 220 V was used for lighting, and the 380 V was used for small motors.

4. Boiler works. It was a 1-story, stuccoed building, measuring 10 x 7 x 8 m. In the building were two steam boilers, whose steam was used to heat the gas holder and to heat and moisten the bog iron ore in the purifiers of the purifying station.

5. Gas holder. It was a wet-type gas holder, 40 m high and 30 m in diameter, and its capacity was 30,000 cu m. [redacted] it was under construction and it was supposed to be finished [redacted] and then go into operation.

50X1-HUM

6. Purifying station. It was a 1-story, red brick building, measuring 45 x 11 x 11 m. It contained six purifiers, whose total capacity was 50,000 cu m per hour. At the station hydrogen sulfide was removed by the Bischoff dry method, and naphthalene was removed from the gas by the Lurgi method. There was no crane in the building, but there was a laboratory where checks were made of the quality of gas received from the Lenin Steel Works.

7. Compressor station. It was a 1-story, red brick building, measuring 40 x 15 x 14 m. In the basement was a pumping station, which used city water to cool the compressors. In the building were 8 Austrian high-pressure, turbine-type MAF compressors, which were constructed in 1957 by Gazobudowa. Each compressor was designed to operate under 12 atmospheres of working pressure, but actually operated under 8 atmospheres of pressure, and was powered by a Polish M-5 6000 V, 410 kw electric motor. The capacity of each compressor was 2500 cu m per hour, and they all were in good condition.

50X1-HUM

[redacted] there was a plan to construct four more compressors (same type). and the foundations have already been laid for them [redacted]

In the building were also four East German turbine-type Jaeger gas exhausters, which were constructed in 1957 by Gazobudowa. Each was designed to operate under .4 atmospheres of working pressure, but actually operated under .1 atmospheres of pressure. The capacity of each was 8000 cu m per hour, and each was operated by a Polish 6000 V 120 kw M-5 electric motor. All the gas exhausters were in good condition.

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50X1-HUM

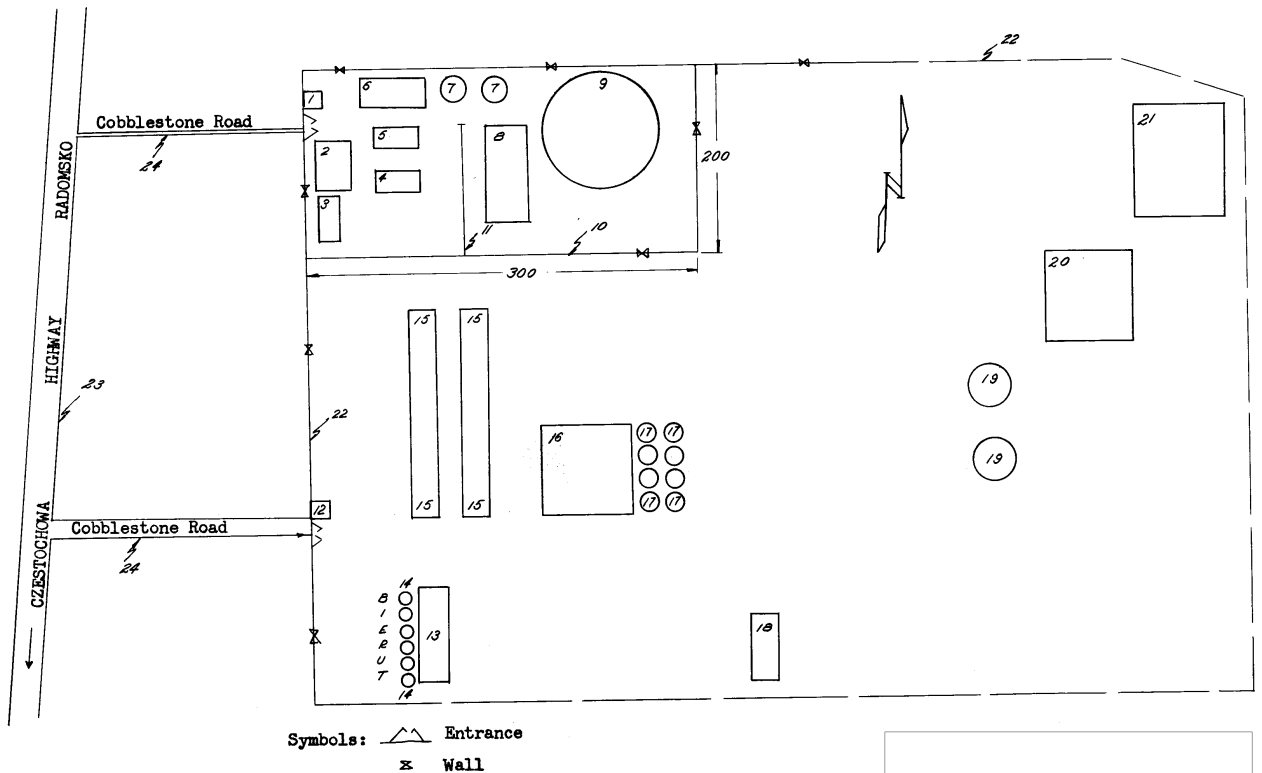
107



Legend to Annex C-16 (Cont'd)

8. Wire-mesh fence. It was $2\frac{1}{2}$ m high and had three strands of barbed wire on top.
9. Fire brick plant. It was a 1-story, stuccoed building, measuring 250 x 30 x 10 m. Fire bricks were produced in the plant for use at the Lenin Steel Works.
10. Chemical building. It was a 1-story, red brick building, measuring 60 x 35 x 10 m. The workers there removed chemical properties from raw coal gas.
11. Ten gas scrub towers.
12. Four slaking towers. They were made of reinforced concrete and red brick, red brick on the outside. They measured 25 x 7 x 20 m and the capacity of each was 35 tons (maximum) of cokes each time.
13. Five and one-half coke batteries.
14. Three blast furnaces. The reinforced-concrete foundations were about 16 x 16 m. The blast furnaces were made of steel and were 35 m high.
15. Reinforced-concrete wall. It was $2\frac{1}{2}$ m high and had three strands of barbed wire on top.
16. Cobblestone highway. It was a new cobblestone highway from PLASZOW to KRAKOW.

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SKETCH OF THE BIERUT STEEL WORKS IN POLAND



Symbols:  Entrance
 Wall

CONFIDENTIAL

109

50X1-HUM

Legend to Annex C-17

Annex C-17 shows those major installations that were subordinate to the Bierut Steel Works and all installations subordinate to the Czestochowa Compressor and Purifying Station (Items 1 through 9). The Bierut Steel Works was about 3 km wide and about 4 km long, but only that portion containing the major installations is shown in Annex C-17.

1. Entrance building. This was the entrance building to the compressor and purifying station. The building measured 3 x 3 x 2½ m. There was one armed civilian guard here who checked the passes of all people coming in and going out of the station.

2. Administrative building. The first floor of this building was used for administrative offices. The second contained two apartments, one of which was occupied by the chief of the compressor and purifying station, the other by the chief electrician.

3. Garage. Its dimensions were 10 x 6½ x 4½ m, and it was large enough for four trucks.

4. Mechanical workshop. It was a 1-story, red brick building, measuring 10 x 5 x 4 m, in which repairs were made on the equipment in the Czestochowa Compressor and Purifying Station.

5. Electricity distributing building. It was a 1-story, red brick building, measuring 20 x 7 x 5 m. Two transformers, which would reduce 6000 V to 220/380 V, were supposed to be installed in this building before September 1960.

6. Compressor station. It was a 2-story, red brick building, measuring 60 x 14 x 15 m. There were five high-pressure compressors and four gas exhausters under construction in the building [redacted]

50X1-HUM

The compressors, scheduled to be finished by September 1960, were East German piston-type, high-pressure KS, which were being constructed by Gazobudowa with the assistance of two old engineers from East Germany. Each compressor was designed to operate under 36 atmospheres of working pressure, have a 10,000 cu m per hour capacity and be operated by a 6000 V electric motor (type unknown).

The four East German turbine-type Jaeger gas exhausters were to be finished in September 1960. Each exhauster was designed to operate under .4 atmospheres of working pressure, have a 10,000 cu m per hour capacity and be operated by an East German electric motor (name unknown). Gazobudowa was doing the work and the previously mentioned East German engineers were giving technical advice.

[redacted] a pumping station was going to be constructed in the basement of this building, and to be finished in September 1960.

50X1-HUM

7. Two water-cooling towers.

8. Purifying station. It was a 1-story, red brick building, measuring 50 x 14 x 11 m. Four purifiers were being constructed in the building by Gazobudowa and were to be finished in September 1960. Their total capacity would be 50,000 cu m per hour. They would remove hydrogen sulfide from the gas by the Bischoff dry method.

50X1-HUM

9. Planned gas holder. This was a MAN dry-type gas holder. It was to be 110 m high, 50 m in diameter, and its capacity was to be 150,000 cu m. Work had not started on this gas holder [redacted] but it was supposed to be finished in September 1960.

10. Reinforced-concrete wall. It was 2½ m high and had 3 strands of barbed wire on top.

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110

50X1-HUM

Legend to Annex C-17 (Cont'd)

11. Railroad spur
12. Entrance building. It was a 1-story, unpainted, wooden building, measuring $2\frac{1}{2} \times 2\frac{1}{2} \times 3$ m.
13. Martin open-hearth plant. It was a 2-story, red brick building, measuring $150 \times 40 \times 16$ m, and it contained six Martin open-hearth furnaces.
14. Six chimneys. They were for the six Martin open-hearth furnaces. Each was 10 m in diameter at the base and 70 m high. Each had a letter on it spelling out the name of the steel works "Bierut."
15. Six coke batteries. Two coke batteries were supposed to be finished in September 1960, the other four by 1965.
16. Chemical building. It was a 1-story, red brick building, measuring $60 \times 35 \times 10$ m. It was used by the chemical section that was responsible for removing chemical properties from raw coal gas.
17. Eight gas scrub towers
18. Tube-rolling mill. It was a 1-story, red brick building, measuring $500 \times 50 \times 15$ m. This mill produced pipes up to 250 mm in diameter by the Mannesmann Process (about 100,000 tons).
19. Two blast furnaces. They were made of steel and were 35 m high. Their reinforced-concrete foundations were 16 m wide and 16 m long.
20. Sintering plant. It was a 3-story, red brick building, measuring $50 \times 35 \times 30$ m.
21. Gas burner building. It was a 1-story, red brick building, measuring $150 \times 15 \times 6$ m. It contained gas burners, which were used to heat the coal in railroad cars when it was frozen together.
22. Reinforced-concrete wall. It was $2\frac{1}{2}$ m high and had 3 strands of barbed wire on top.
23. Cobblestone highway to CZESTOCHOWA.
24. Cobblestone roads to compressor and purifying station and steel works.

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CONFIDENTIAL

111

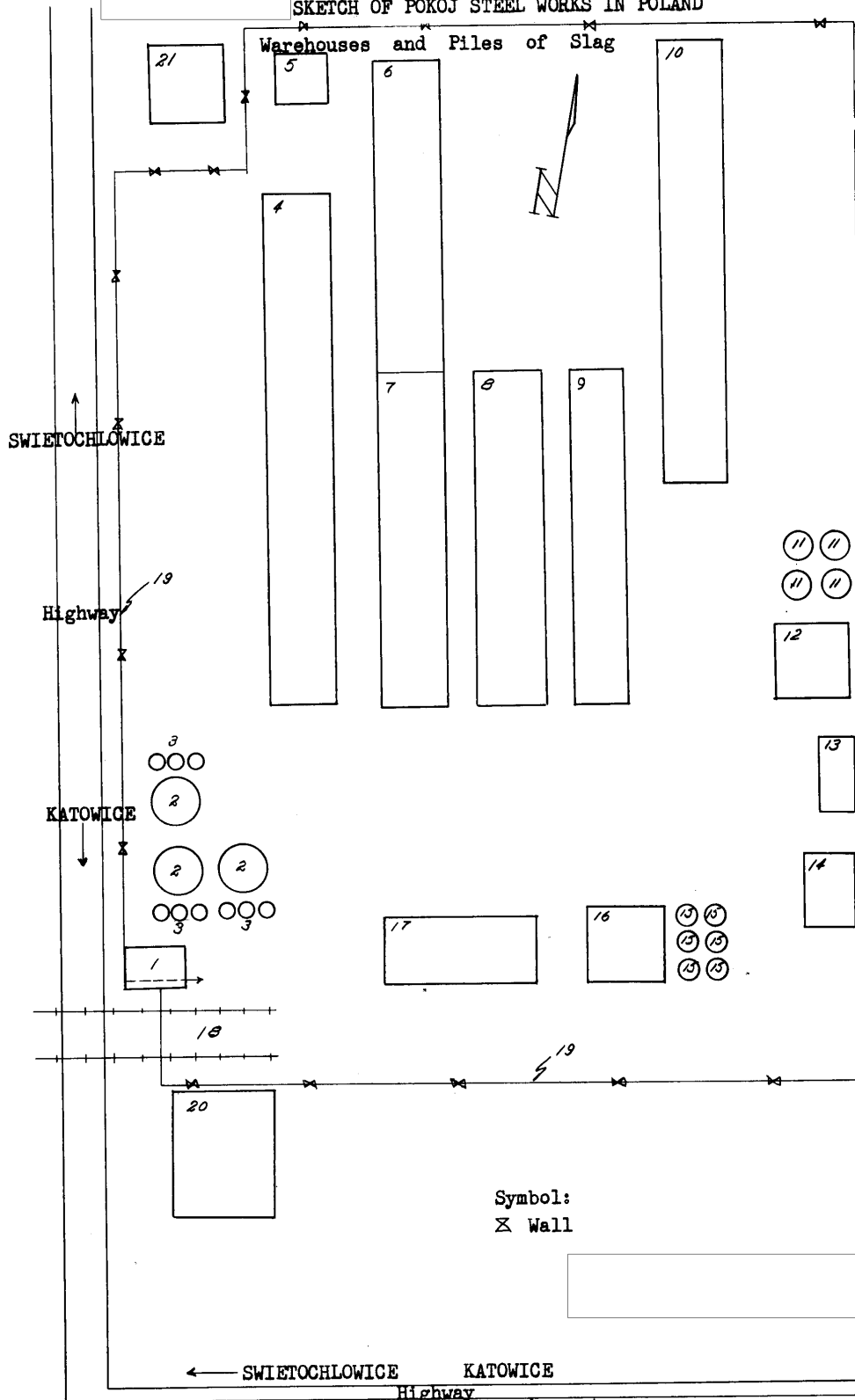
Annex C-18

SKETCH OF POKOJ STEEL WORKS IN POLAND

Warehouses and Piles of Slag

50X1-HUM

50X1-HUM



50X1-HUM

CONFIDENTIAL

CONFIDENTIAL

112

50X1-HUM

Legend to Annex C-18

Annex C-18 shows those major installations subordinate to the Pokoj Steel Works [] the works was about 1 km wide and 2½ km long.

50X1-HUM

1. Entrance building. It was a 1-story, red brick building, measuring 8 x 6 x 4 m. There were two civilian armed guards here who checked all persons coming in and going out of the works.
2. Three blast furnaces. They were made of steel and were 35 m high. The reinforced concrete foundations of the blast furnaces were 16 m long and 16 m wide.
3. Nine Cowper stoves. They were 20 m high and 3½ m in diameter.
4. Martin open-hearth plant. It was a 2-story, red brick building, measuring 250 x 40 x 20 m, and contained four Martin open-hearth furnaces.
5. Stripping section. It was a 1-story, red brick building, measuring 15 x 18 x 24 m.
6. Bloomery. It was a 1-story, red brick building, measuring 120 x 40 x 20 m.
7. Rolling mill. It was a 1-story, red brick building, measuring 130 x 40 x 20 m. It produced rolled steel plates up to 60 mm in diameter and large I-beams, U-beams, channels, T-beams, and rectangular beams for bridges, ships, and industrial buildings.
8. Rolling mill. It was a 1-story, red brick building, measuring 130 x 40 x 20 m. It produced steel plates from 8 mm to 15 mm thick, which were sent to the Ferron Steel Works in KATOWICE, where they were used to produce gas, steam and water pipes.
9. Mechanical workshops. It was a 1-story, red brick building, measuring 130 x 30 x 20 m. Part of it was used to produce rollers for the rolling mills of the Pokoj, Florian and Batory Steel Works.
10. Storage building. It was a 1-story, red brick building, measuring 150 x 18 x 8 m.
11. Four water-cooling towers. They were 25 m in diameter and 30 m high.
12. Boiler works. It was a 2-story, red brick building, measuring 30 x 30 x 18 m.
13. Electricity distributing building. It was a 1-story, red brick building, measuring 40 x 10 x 8 m.
14. Garage. It was a 1-story, red brick building, measuring 40 x 12 x 6 m.
15. Six gas scrub towers.
16. Chemical building. It was a 1-story, red brick building, measuring 35 x 30 x 10 m. The workers in it removed chemical properties from raw coal gas.
17. One coke battery. Old type containing 30 coke ovens.
18. Two railroad spurs
19. Red brick wall. It was 2½ m high and had three strands of barbed wire on top.
20. Administrative building. It was a red brick, 3-story building, measuring 40 x 16 x 13 m.
21. Oxygen Plant. It was a 1-story, red brick building, measuring 16 x 16 x 10 m. This plant received liquid oxygen from the Finder Azoty Chemical Factory, located in CHORZOW, and used it to produce gaseous oxygen, which was used throughout the Pokoj Steel Works for cutting and welding. There was a pipeline from this plant to the installations using this oxygen.

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Annex C-19

50X1-HUM

CONFIDENTIAL

113

Street (nu)

1 km

ZABRZE Highway KATOWICE

Symbols:
 Entrance
 x Wall

CONFIDENTIAL

50X1-HUM

CONFIDENTIAL

114

50X1-HUM

Legend to Annex C-19

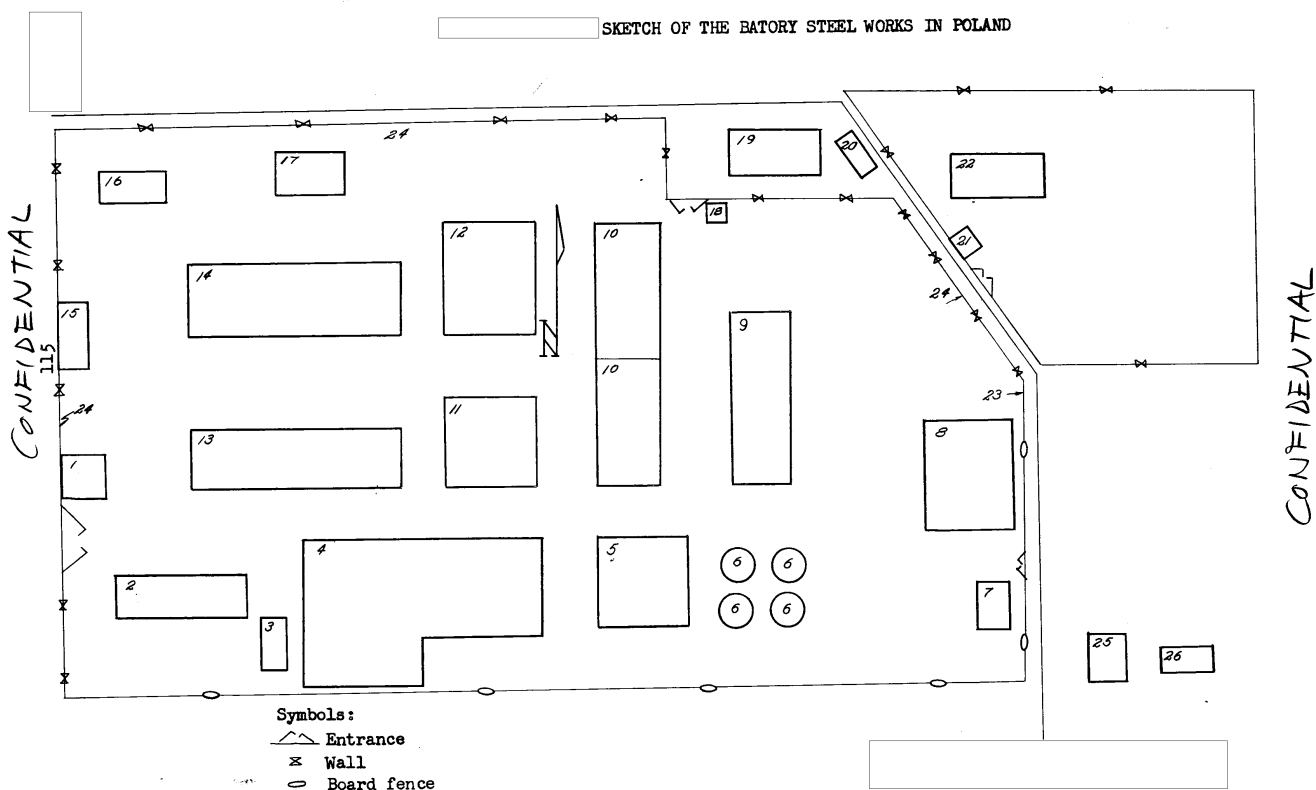
Annex C-19 shows all major installations subordinate to the Florian Steel Works [] this steel works was about 1 km wide across the front and about 800 m long. 50X1-HUM

1. Entrance buildings. Both these entrance buildings were the same size and served the same purpose, only one was for the part of the steel works on the left side of the street and the other for the part of the steel works on the right side of the street. Both buildings were 1-story, red brick, measuring 6 x 6 x 4 m. There were two armed civilian guards dressed in special uniforms on duty at each building. They checked the passes of everyone coming in and going out of each part of the steel works.
2. Two blast furnaces. They were made of steel and were 35 m high. The reinforced-concrete foundations for the furnaces were 16 m wide and 16 m long.
3. Eight Cowper stoves. They were 18 m high and 3½ m in diameter.
4. Sintering plant. It was a 3-story, red brick building, measuring 40 x 25 x 20 m.
5. Reduction and measuring station. It was a 1-story, red brick building, measuring 8 x 6 x 4 m.
6. One-half coke battery
7. Chemical building. It was a 1-story, red brick building, measuring 20 x 20 x 12 m. It was used by the chemical section that was responsible for removing chemical properties from raw coal gas.
8. Six gas scrub towers
9. Steel rolling mill. It was a 1-story, red brick building, measuring 80 x 35 x 16 m, and it produced rolled steel up to 80 mm thick.
10. Bloomery. It was a 1-story, red brick building, measuring 80 x 40 x 18 m.
11. Martin open-hearth plant. It was a 2-story, red brick building, measuring 80 x 45 x 18 m. It contained four Martin open-hearth furnaces.
12. Mechanical workshop. It was a 1-story, red brick building, measuring 60 x 35 x 12 m.
13. Rolling mill. It was a 1-story, red brick building, measuring 80 x 35 x 16 m. It produced profile steel for bridges and large industrial buildings.
14. Electricity distributing building. It was a 1-story, red brick building, measuring 35 x 10 x 8 m. It contained transformers (number unknown).
15. Boiler works. It was a 2-story, red brick building, measuring 40 x 40 x 16 m. It contained three steam boilers (type unknown).
16. Four water-cooling towers. They were 40 m high, 30 m in diameter, and had reinforced-concrete beam foundations.
17. Showers and Washroom. It was a 2-story, red brick building, measuring 30 x 12 x 8 m.
18. Administration building. It was a 3-story, red brick building, measuring 40 x 13 x 15 m. It contained the administrative offices of the steel works.
19. Fire department. This was a 1-story, red brick building, measuring 30 x 10 x 5 m.
20. Warehouse. It was a 2-story, red brick building, measuring 35 x 26 x 7 m. It contained spare parts and expendables for the steel works.
21. Red brick wall. It was 2½ m high and had 3 strands of barbed wire on top.

CONFIDENTIAL

Annex C-20

SKETCH OF THE BATORY STEEL WORKS IN POLAND



50X1-HUM

50X1-HUM

50X1-HUM

CONFIDENTIAL
116

50X1-HUM

Legend to Annex C-20

Annex C-20 shows all installations subordinate to the Batory Steel Works

The works was about 1800 m wide and about 2 km long.

1. Entrance building. It was a 1-story, red brick building, measuring 6 x 6 x 4 m, and was located near the main entrance. [redacted] also noticed the envelopes for the time cards on the wall, and the last numbered envelope was 5960. There were also two civilian armed guards here who checked the passes of all persons coming in and going out of the works.
2. Garage. It was a 1-story, red brick building, measuring 30 x 10 x 4½ m. The garage was used for trucks and fire trucks.
3. Administrative building. It was a 2-story, red brick building, measuring 25 x 12 x 9 m. It contained the administrative offices of the Batory Steel Works.
4. Tube-rolling mill. It was a 1-story, red brick building, measuring 80 x 50 x 18 m. This mill produced gas, steam, water, oil, gasoline and oil drilling pipes.
5. Boiler works. It was a 2-story, red brick building, measuring 80 x 80 x 20 m.
6. Four water-cooling towers. They were 30 m in diameter at the base and 45 m high.
7. Reduction and measuring station. It was a 1-story, red brick building, measuring 12 x 10 x 6 m. It measured the amount of raw and purified coal gas and natural gas received by the works and reduced the pressure of the gas before it went into the low-pressure gas pipelines of the steel works.
8. Generator station. It was a 2-story, red brick building, measuring 80 x 65 x 25 m. Generator gas was produced here. It was mixed with the natural gas and purified coal gas received from ZGOZ and used for the needs of the steel works.
9. Martin open-hearth plant. It was a 1-story, red brick building, measuring 130 x 40 x 25 m. It contained ten Martin open-hearth furnaces.
10. Rolling mill. It was actually two buildings joined together. Its over-all dimensions were 200 x 40 x 20 m. One of the buildings produced rolled steel up to 150 mm thick. The other produced rolled steel up to .4 mm thick.
11. Punch press building. This was a 1-story, red brick building, measuring 80 x 80 x 20 m. It contained punch presses, which were used to make steel parts.
12. Mechanical workshop. It was a 1-story, red brick building, measuring 100 x 80 x 18 m.
13. Warehouse. It was a 1-story, red brick building, measuring 100 x 22 x 10 m. It was used for storing equipment parts for the steel works.
14. Mechanical workshop. It was a 1-story, red brick building, measuring 100 x 35 x 15 m. Machines of the steel works were repaired here.
15. Administrative building. It was a 3-story, red brick building. The administrative personnel here did all the buying for the steel works.
16. Electricity distributing building. It was a 1-story, red brick building, measuring 40 x 10 x 8 m. There were two transformers in the building. One transformer reduced 60,000 V to 6000 V. The other reduced 6000 V to 220/380 V.

50X1-HUM

CONFIDENTIAL

CONFIDENTIAL

117

50X1-HUM

Legend to Annex C-20 (Cont'd)

17. Laboratory. It was a 2-story, red brick building, measuring 30 x 14 x 10 m. The laboratory made all types of tests on steel to check its quality.
18. Secondary entrance building. It was a 1-story, red brick building, measuring 5 x 5 x 4 m. There were two armed civilian guards posted at this building.
19. Administrative building. It was a 3-story, stuccoed building, measuring 40 x 20 x 16 m. It contained the branch offices of the Batory Steel Works.
20. Apartment house. It was a 3-story, red brick building, measuring 25 x 12 x 12 m. It was occupied by workers from the Batory Steel Works.
21. Entrance building. It was a red brick building, measuring 5 x 5 x 4 m. It was the entrance building for the part of the Batory Steel Works on the other side of ulica Lesna. Two armed civilian guards dressed in special uniforms checked the passes of everyone coming in and going out of the works.
22. Coal Bogie Manufacturing Factory (Fabryka Wozkow Kopalnianych). It was a 1-story, red brick building, measuring 60 x 35 x 15 m. It was the largest factory in Poland that produced bogies for transporting coal in coal mines.
23. Wood fence. It was a dark brown, wooden fence, 2½ m high, with 3 strands of barbed wire on top.
24. Red brick wall. It was 2½ m high and had three strands of barbed wire on top.
25. Hajduki Wielkie Gas Filling Station. It was a 1-story, stuccoed building, measuring 12 x 8 x 5 m.
26. Warehouse. It was a 1-story, stuccoed building, measuring 12 x 5 x 5 m, and was part of the Hajduki Wielkie Gas Filling Station. It contained four methane gas balloons, each holding 1000 liters, which under 350 atmospheres of pressure becomes 350 cu m of methane gas. The natural gas from this warehouse was pumped into trucks and burned like gasoline.

CONFIDENTIAL

-118-

50X1-HUM

50X1-HUM

32

7

5676	5677	5678
5776	5777	5778
5876	5877	5878

50X1-HUM

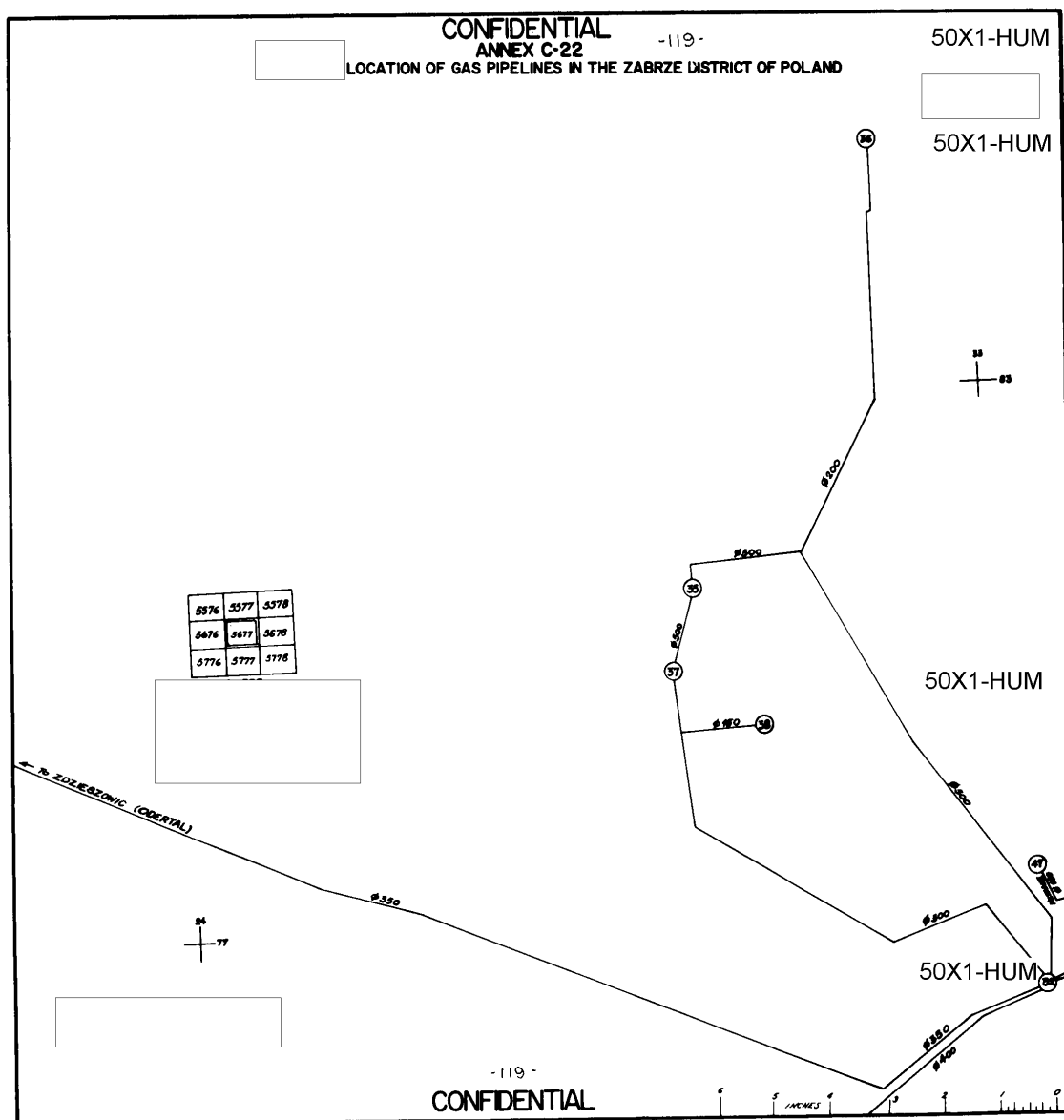
-118-

CONFIDENTIAL

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INCHES

50X1-HUM



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120

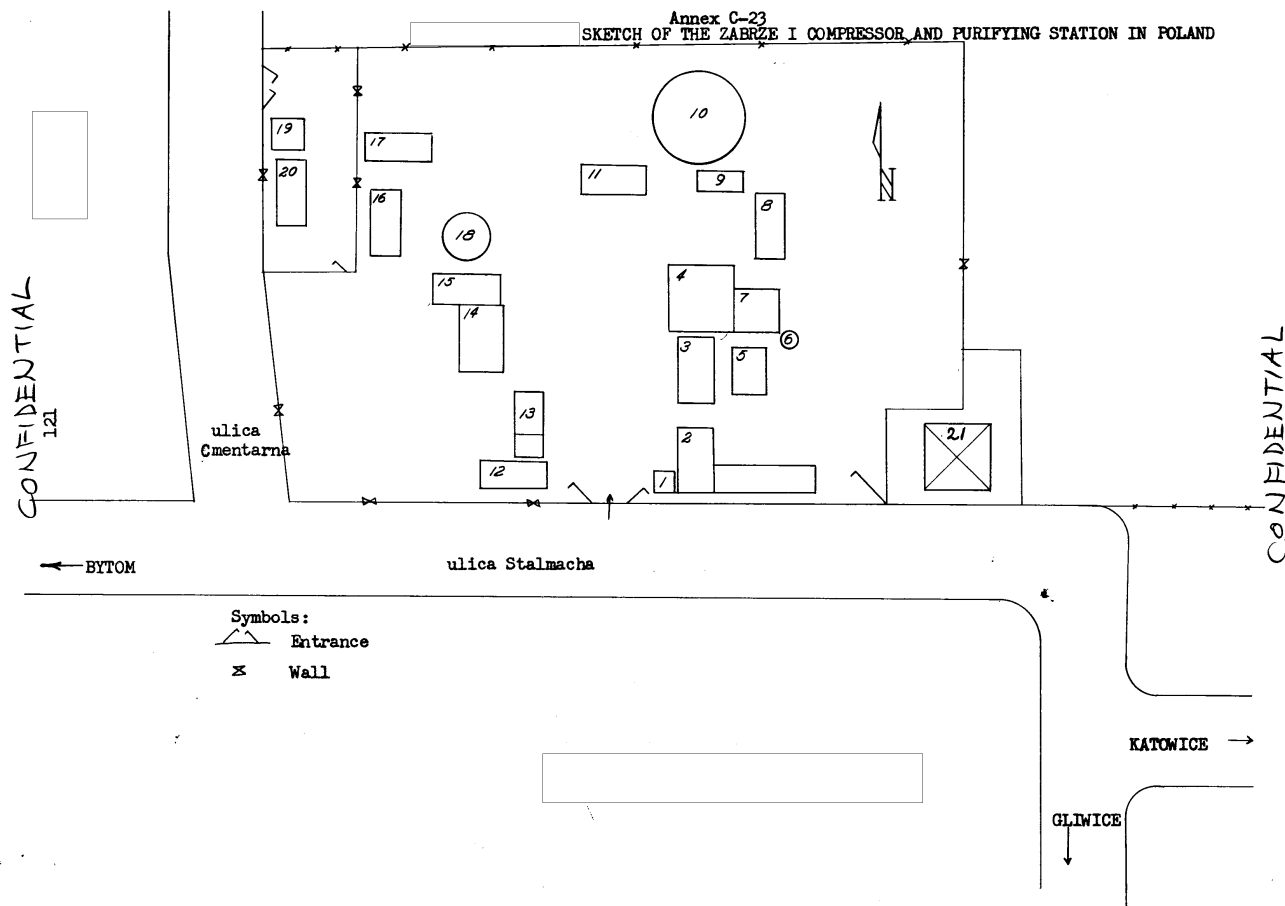
50X1-HUM



Legend to Annex C-22

- 32. Plotrowice Raw and Purified Coal Gas Distributing Junction
- 35. Labendy Steel Works
- 36. Ryskowice Reduction and Measuring Station
- 37. Herminia Steel Works
- 38. Labendy City Gasworks
- 47. Gliwice Gas Filling Station

CONFIDENTIAL



50X1-HUM

50X1-HUM

50X1-HUM

CONFIDENTIAL

122

50X1-HUM

Legend to Annex C-23

Annex C-23 shows all installations subordinate to the Zabrze I Compressor and Purifying Station.

1. Entrance building. It was a 1-story, red brick building, measuring 3 x 3 x 3 m. There was an unarmed civilian guard, dressed in a special uniform, on duty in this building at all times to check who was coming in and going out of the station.
2. Administrative building and one apartment. The administrative part of the building was two stories high, red brick, and measured 14 x 7 x 8 m, and handled station administrative matters. The other part of the building contained an apartment, made of red brick, one story high, and measured 15 x 6 x 4 m.
3. Warehouse and workshop. It was a 1-story, red brick building, measuring 20 x 6 x 6 m. A portion of the building contained parts; the rest was a pipe workshop.
4. Central mechanical workshop. It was a 2-story stuccoed building, measuring 12 x 10 x 12 m. Almost all major repairs for ZGOZ were made here on equipment used in the gas industry.
5. Administrative building. This was a 2-story stuccoed building, measuring 25 x 10 x 8 m, which housed the following branches of ZGOZ: the General Technical Branch, the Employment Branch, and the Collection Branch.
6. Chimney. It was made of red brick. It was 40 m high and 4 m in diameter at the base.
7. Boiler works. It was a 1-story, red brick building, measuring 12 x 12 x 7 m. It contained two steam boilers used to heat the installations in the compressor and purifying station and to heat and moisten the bog iron ore in the purifiers.
8. Carpentry workshop and vehicle mechanics workshop. It was a 2-story, red brick building, measuring 15 x 7 x 8 m.
9. Garage. It was a 1-story, red brick building, measuring 10 x 7 x 5 m.
10. Gas holder. It was a wet-type 10,000 cu m gas holder, 25 m high and 18 m in diameter. It was in good condition.
11. Transportation Branch and dining room. It was a 2-story, red brick building, measuring 10 x 5 x 8 m. The first floor was used as a dining room for the workers. The second floor was used by the Transportation Branch of ZGOZ.
12. Electricity distributing building. It was a 1-story, red brick building, measuring 8 x 5 x 5 m. There were two transformers here. One transformer reduced 6000 V to 220/380 V, and the other reduced 6000 V to 500 V.
13. Cash collections and finance building. It was a 1-story, red brick building, measuring 12 x 6 x 7 m. Part of the building was used to collect payment for gas from small consumers. Normally payment was made to the man who checked the gas meter, but if the consumer did not have the cash at that time, he could make payment in this building. Another part of the building was used by finance personnel who figured out the workers' pay and paid them. There was also a reduction and measuring station in the building. It reduced the pressure of the gas before it went into the low-pressure gas pipelines of ZABRZE and measured how much gas ZABRZE received. ZABRZE received 1000 to 1500 cu m per hour of purified coal gas from this station.

CONFIDENTIAL

CONFIDENTIAL

123

50X1-HUM

Legend to Annex C-23 (Cont'd)

14. Compressor station. It was a 1-story, red brick building, measuring 20 x 10 x 6 m. It contained the following compressors and gas exhausters:

One German high-pressure, rotation-type KSB compressor, which was constructed in 1936 by the Germans. It was designed to operate under 3 atmospheres of working pressure, but actually operated under about $2\frac{1}{2}$ atmospheres of pressure, and was powered by a 6000 V, 280 kw German [] electric motor. The capacity of the compressor was 5000 cu m per hour. It was in fair condition. 50X1-HUM

Four German high-pressure, rotation-type KSB compressors, which were constructed in 1938 by the Germans. Each was designed to operate under 3 atmospheres of working pressure, actually operated under about $2\frac{1}{2}$ atmospheres of pressure, and was powered by a 6000 V, 120 kw German [] electric motor, and each had a capacity of 1500 cu m per hour. All four compressors were in fair condition. 50X1-HUM

One German high pressure, rotation-type KSB compressor, which was constructed in 1938 by the Germans. It was designed to operate under 3 atmospheres of working pressure, actually operated under about $2\frac{1}{2}$ atmospheres of pressure, and it was powered by a German 500 V, 80 kw Schorch electric motor. The capacity of the compressor was 800 cu m per hour, and it was in poor condition.

One [] high-pressure, rotation-type Luchard compressor, which was constructed in 1949 by ZG0Z. It was designed to operate under 3 atmospheres of working pressure, actually operated under about $2\frac{1}{2}$ atmospheres of pressure, and was powered by a Polish 6000 V, 220 kw M-5 electric motor. The capacity of the compressor was 3000 cu m per hour. It was in good condition. 50X1-HUM

One German Aertzner gas exhauster. It was designed to operate under .4 atmospheres of working pressure, actually operated under about .1 atmosphere of pressure, and was powered by a German 500 V, 100 kw [] electric motor. The capacity of this gas exhauster was 8000 cu m per hour. It was constructed in 1935 by the Germans and was in poor condition. 50X1-HUM

One German [] gas exhauster, which was constructed in 1934 by the Germans. It was designed to operate under .4 atmosphere of working pressure, but actually operated under about .1 atmosphere of pressure. It was powered by a German 500 V, 65 kw [] electric motor, and its capacity was 6000 cu m per hour. It was in poor condition. 50X1-HUM

15. Purifying station. It was a 2-story, red brick building, measuring 25 x 10 x 9 m. There were two purifiers on the first floor of the building, that removed hydrogen sulfide from the gas by the Pintsch dry method. Part of the second floor was used for storing bog iron ore; the rest of it was used by an overhead traveling crane that put bog iron ore into the purifiers and also took it out.

16. Building for two purifiers. It was a square, red brick building, measuring 25 x 7 x 6 m, with a flat roof. The bricks were smeared with grease and covered with tar paper. The two purifiers in the building removed hydrogen sulfide from the gas by the Pintsch dry method. The building was just an enclosure to protect the purifiers from the elements.

17. Building for two purifiers. Same type of building as mentioned in Item 16. It also contained two purifiers that removed hydrogen sulfide from the gas by the Pintsch dry method.

All the previously mentioned purifiers, although not in the same building, were part of one purifying system. All the purifiers together purified up to 6000 cu m of gas per hour.

CONFIDENTIAL

CONFIDENTIAL

124



50X1-HUM

Legend to Annex G-23 (Cont'd)

18. Gas holder. This was a 3000-cu-m wet-type gas holder. It was 20 m high and 13 m in diameter and was in fair condition.

19. Dispensary. It was a 1-story, stuccoed building, measuring 10 x 9 x 4 m. A nurse was on duty here during working days from 0800 to 1600. There was also a doctor here, who worked 3 hours a day.

20. Apartment house. It was a 2-story, stuccoed building, measuring 16 x 9 x 8 m. It contained six apartments, which were occupied by workers of ZG0Z who were on call in case of emergency.

21. Water reservoir. It was a concrete water reservoir, 20 m long, 2 m wide, and 4 m deep. Its capacity was about 35,000 gallons, and it was to be used in case of fire.

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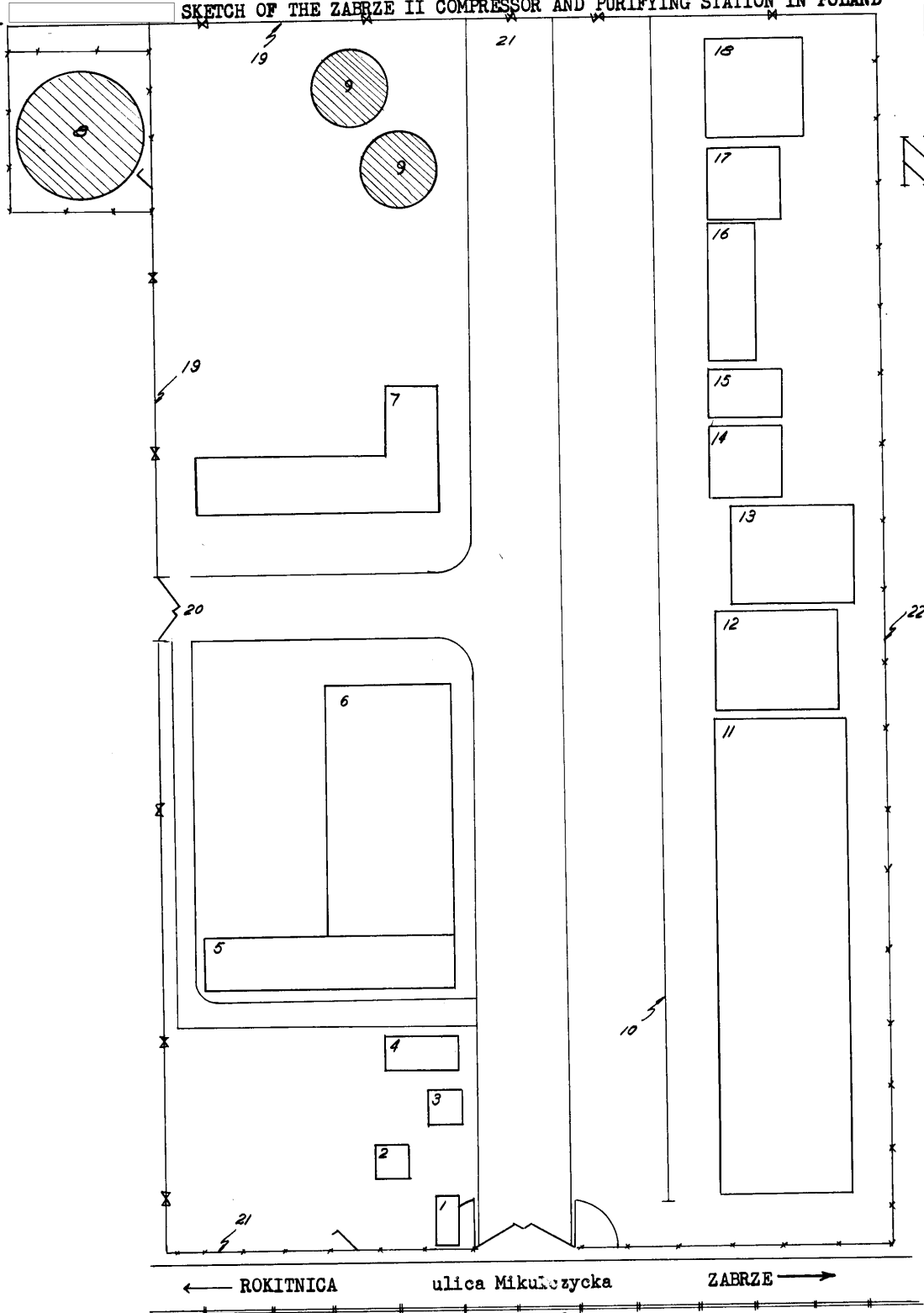
CONFIDENTIAL

125
Annex G-24

50X1-HUM

50X1-HUM

SKETCH OF THE ZABRZE II COMPRESSOR AND PURIFYING STATION IN POLAND



Symbols:
 Entrance
 x Wire-mesh fence
 x Wall

50X1-HUM

CONFIDENTIAL

CONFIDENTIAL

126

50X1-HUM

Legend to Annex C-24

Annex C-24 shows all installations subordinate to the Zabrze II Compressor and Purifying Station.

1. Entrance building. It was a 1-story, red brick building, measuring 5 x 3 x 4 m. There were always two unarmed doormen, dressed in special uniforms, on duty in this building who checked the passes of everyone coming in and going out of the station. There was also a time clock in the building that all workers had to punch when they arrived and departed from the station.
 2. Gasoline station. It was a 1-story, red brick building, measuring 3 x 3 x 3 m. The station had a 20,000-liter gasoline tank and a hand pump used only at night or in case of emergency. During the day vehicles got gasoline in the city.
 3. Scales building. It was a 1-story, red brick building, measuring 2½ x 2½ x 3 m. The scales platform was located alongside the building and was used for weighing loads up to 20 tons.
 4. Electricity distributing building. It was a new, 2-story, red brick building. It was constructed in fall or winter 1968, but the new transformers for the building had not arrived yet.
 5. Electricity distributing station. It was a 4-story, red brick building, measuring 22 x 6 x 16 m. The basement of the building contained a pumping unit, which received water from the station's two water-cooling towers, and pumped it through the compressors located next door in the compressor station. There was an electrical shop on the first floor of the building, which was used for making all kinds of electrical repairs. There were two transformers on the first floor, but they will be dismantled and used elsewhere when the new electricity distributing building goes into operation because they are old and obsolete. One of these transformers reduced 6000 V to 220/380 V, and the other transformer reduced 6000 V to 500 V.
- The second floor of the building contained high-voltage switches for the compressors, but they were also an obsolete type and would not be used when the new station was finished.
- The third floor of the building contained low-voltage switches. They also would be replaced by new switches located in the new building.
- The fourth floor contained a chemical laboratory that determined the quality of the gas received by the station.
6. Compressor station. It was a 1-story, red brick building, measuring 30 x 14 x 15 m. It contained the following compressors:
- Two Czechoslovak high-pressure, turbine-type Skoda compressors, which were constructed in 1949 by Gazobudowa. Each compressor was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres, and was powered by a Czechoslovak 6000 V, 2650 kw Skoda electric motor. Each of the compressors was supposed to have a 20,000-cu-m per hour capacity, but, due to a construction error, each was capable of compressing a maximum of 16,500 cu m of gas per hour. These compressors were in fair condition.

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50X1-HUM

127

Legend to Annex C-24 (Cont'd)

Two East German high-pressure, piston-type KS compressors. Each of these compressors was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had a 5000-cu-m-per-hour capacity, and was powered by an East German 6000 V, 380 kw Sachsenwerk electric motor. Both compressors were in good condition.

Two Czechoslovak high-pressure, piston-type Sokolowa compressors. They were constructed in 1958 by Gazobudowa. Each compressor was designed to operate under 8 atmospheres of working pressure, actually operated under about 6 atmospheres of pressure, and had a 10,000 cu m per hour capacity, and was powered by a Czechoslovak 6000 V, 1200 kw Stalingrad electric motor. [redacted] these compressors were in good condition; but they both used Herbig-type valves, which were made of poor-grade steel. The valves were always breaking, and, in some cases, parts of them fell into the compressor cylinders, causing additional damage. The initial cost of these compressors was very high, about 500,000 zlotys. 50X1-HUM

This building also contained a hand-operated, overhead traveling crane, used to make repairs on the compressors.

7. Mechanical workshop and carpenter shop. This was a 1-story, L-shaped, red brick building, 5 m high. The longer side was 20 m long and 7 m wide. The shorter side was 10 m long and 7 m wide.

8. Gas holder. This was a MAN dry-type, 100,000-cu-m gas holder, and it was 80 m high and 40 m in diameter. The gas holder was constructed by the Germans in 1942 and was in good condition.

9. Two water-cooling towers. They were 22 m high and 15 m in diameter at the base.

10. Railroad spur. It was used by trains hauling bog iron ore and other supplies and equipment to the compressor and purifying station.

11. Purifying station. It was a 2-story, red brick building, measuring 80 x 12 x 11 m. The station contained seven large and two small purifiers that removed hydrogen sulfide from the gas by the Bischoff dry method. The total capacity of the station was 50,000 cu m per hour.

The second floor of the building was used for a 1.5-ton, overhead traveling crane, which put bog iron ore into, and took it out of, the purifiers. It was also used to unload railroad cars that were parked near the building.

The purifying station was built by the Germans in 1941. The Soviets dismantled it in 1945 but did not remove the four large and two small purifiers in it (capacity 26,000 cu m per hour). ZGOZ rebuilt the station in 1947, and in 1954 Gazobudowa constructed three more large purifiers in it, increasing its capacity to 50,000 cu m per hour. It was in good condition.

12. Gas exhauster building. It was a 1-story, red brick building, measuring 10 x 9 x 5 m. It contained two German Aertzner gas exhausters, which had been constructed in 1952 by Gazobudowa. Each was designed to operate under .4 atmospheres of working pressure, actually did operate under .4 atmospheres of working pressure, and had a 6000-cu-m-per-hour capacity, and was operated by a German 500 V, 90 kw Sachsenwerk electric motor. Both gas exhausters were in good condition.

There was also a 15-ton, hand-operated, overhead traveling crane in the building, for making repairs on the gas exhausters.

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50X1-HUM

128



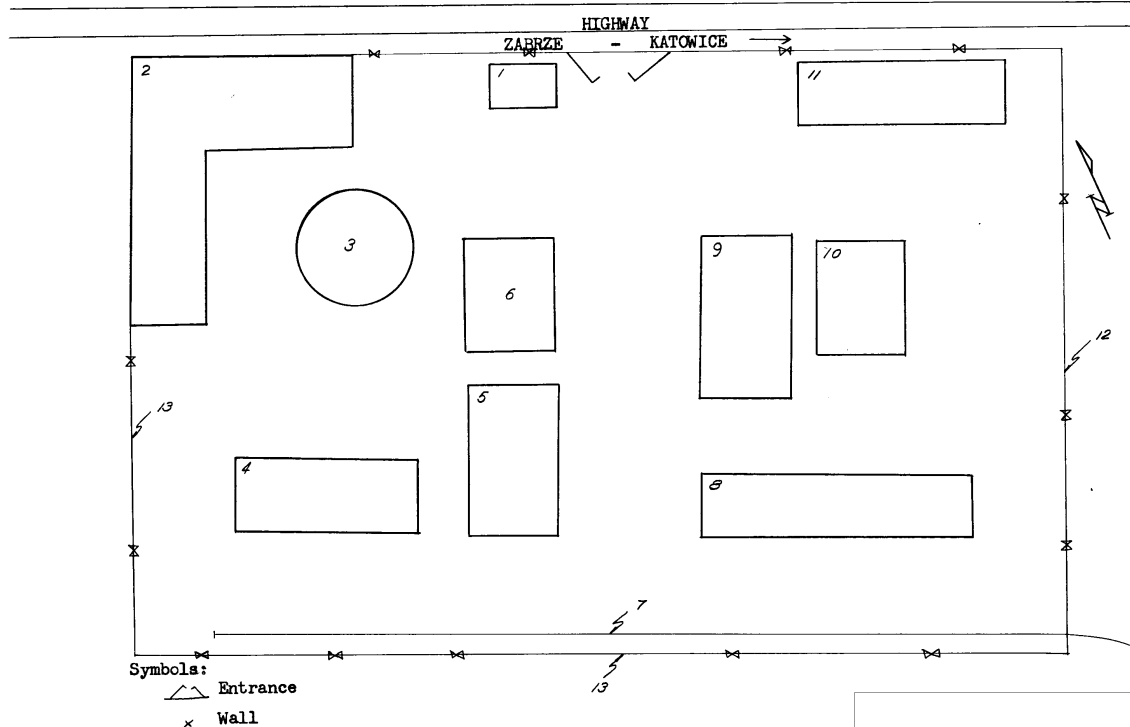
Legend to Annex C-24 (Cont'd)

13. Administrative building. It was a 3-story, red brick building. The first floor was divided into offices, one of which was occupied by the boss of the station. The remaining offices were occupied by engineers. The second floor was occupied by administrative personnel of the station. The third floor was occupied by the station's factory council, and there was one office for a member of the Polish United Workers (Communist) Party (Polska Zjednoczona Partia Robotnicza - PZPR). this man was just a spy for the Communist Party. He listened in on the conversations of the workers and watched their every move. 50X1-HUM
14. Fire department equipment building. It was a 1-story, red brick building, measuring 7 x 6 x 5 m. It contained fire-fighting equipment, such as fire extinguishers, ladders, asbestos suits, axes and shovels.
15. Store building. It was a 1-story, stuccoed building, measuring 7 x 5 x 6 m. It was used to store oil and grease.
16. Warehouse. It was a 1-story, white, brick building, measuring 20 x 7 x 4 m. It was used to store parts for the compressor and purifying station.
17. Club building. It was a 2-story, stuccoed building, measuring 10 x 9 x 10 m. The first floor of the building contained toilets, showers, and lockers for the workers' clothes. The second floor contained the workers' club.
18. Measuring station. It was a 1-story, red brick building, measuring 10 x 10 x 5 m. The station measured the raw coal gas received by the Zabrze II Compressor and Purifying Station.
19. Reinforced-concrete wall. It was 2½ m high and had three strands of barbed wire on top.
20. Safety gate. It was to be used in case of fire.
21. Internal roads of the Zabrze II Compressor and Purifying Station.
22. Wire-mesh fence. It was 2½ m high and had three strands of barbed wire on top.
23. Streetcar line number 3.

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SKETCH OF THE SWIETOCHLOWICE COMPRESSOR AND DISTRIBUTING STATION IN POLAND

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50X1-HUM

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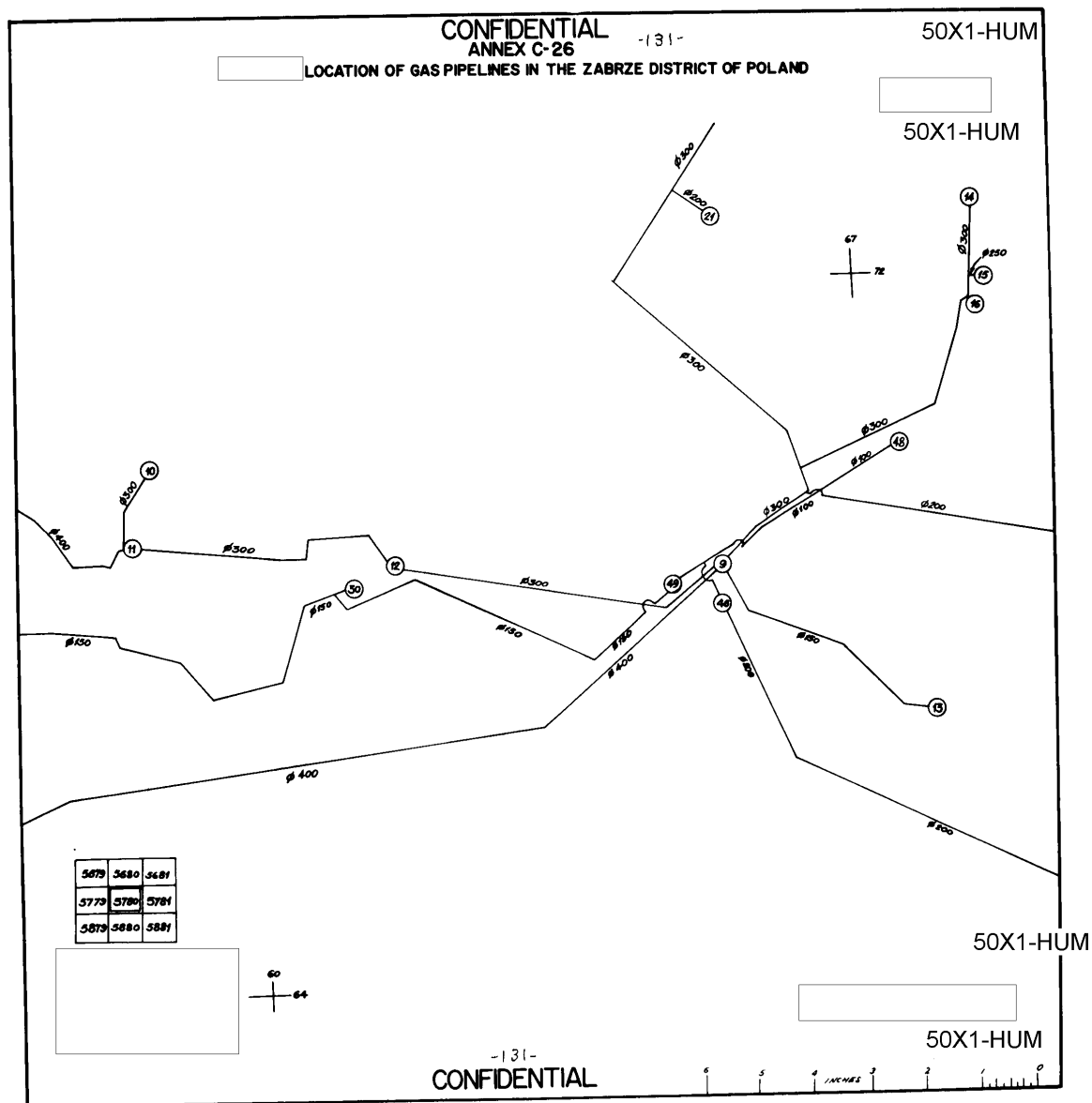
130

Legend to Annex C-25

Annex C-25 shows all installations subordinate to the Swietochlowice Compressor and Distributing Station.

1. Entrance building. It was a 1-story, red brick building, measuring 6 x 5 x 4 m. There was a telephone in the building that was part of ZGOZ telephone system. There was an unarmed civilian guard on duty, who answered the telephone and checked people coming in and going out.
 2. Administrative building. It was a 3-story, L-shaped stuccoed building. The longest side was 25 m long and 8 m wide. The short side was 15 m long and 8 m wide. The building was 10 m high. The first floor contained the cash collection office for SWIETOCHLOWICE and CHORZOW and the administrative offices. The second floor contained administrative offices. The third floor was divided into two apartments.
 3. Gas holder. It was a 30,000-cu-m, wet-type gas holder, 40 m high and 35 m in diameter. It was constructed before World War II and was in poor condition.
 4. Garage. It was a 1-story, stuccoed building, measuring 25 x 8 x 5 m. It was large enough for five trucks.
 5. Boiler works. It was a 1-story, red brick building, measuring 22 x 12 x 7 m.
 6. Compressor station. It was a 1-story, red brick building, measuring 20 x 10 x 8 m. There were two German Jaeger gas exhausters in the building. They were to be used only in case of emergency because they were very old (about 25 years old) and were in poor condition.
- Each of the gas exhausters was designed to operate under .6 atmospheres of working pressure, was powered by a 6000 V, 140 kw German electric motor and had a 5000-cu-m-per-hour capacity.
7. Railroad spur.
 8. Pipe warehouse. It was a 1-story, stuccoed building, measuring 35 x 10 x 5 m.
 9. Purifying station. It was a 2-story, red brick building, measuring 30 x 14 x 10 m. It was very old and not operating.
 10. Mechanical workshop. It was a 2-story, stuccoed building, measuring 25 x 15 x 10 m. Gas meters were repaired here.
 11. Electricity distributing building. It was a 1-story, red brick building, measuring 25 x 7 x 6 m. There were two transformers here that reduced 6000 V to 220/380 V.
 12. Red brick wall. It was 2½ m high.
 13. Reinforced-concrete wall. It was 2½ m high and had three strands of barbed wire on top.

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132



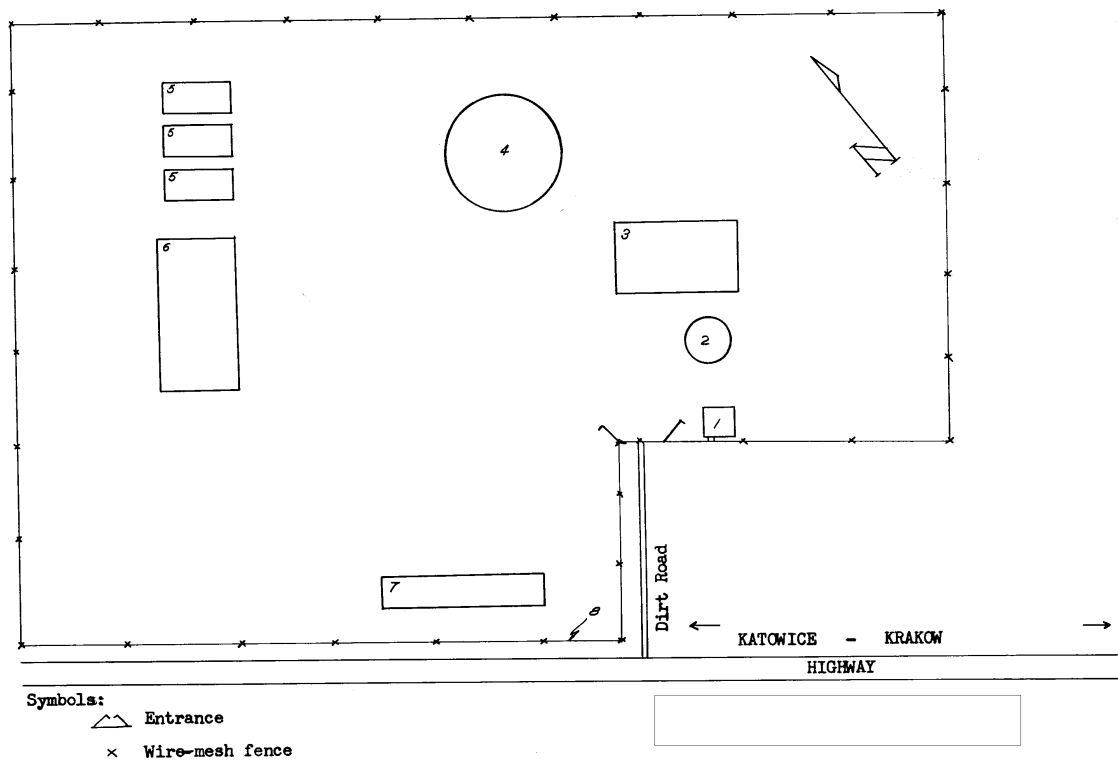
Legend to Annex C-26

- 9. Szopienice Compressor and Distributing Station
- 10. Baildon Steel Works
- 11. Katowice Distributing Station
- 12. Ferron Steel Works
- 13. Myslowice City Gasworks
- 14. Katarzyna Steel Works
- 15. Cedler Steel Works
- 16. Deichsel Steel Works
- 21. Milowice Steel Works
- 46. Myslowice Measuring Station
- 48. Sosnowiec Gas Filling Station
- 49. Szopienice Gas Filling Station
- 50. Katowice Gas Filling Station

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SKETCH OF THE SZOPIENICE COMPRESSOR AND DISTRIBUTING STATION IN POLAND

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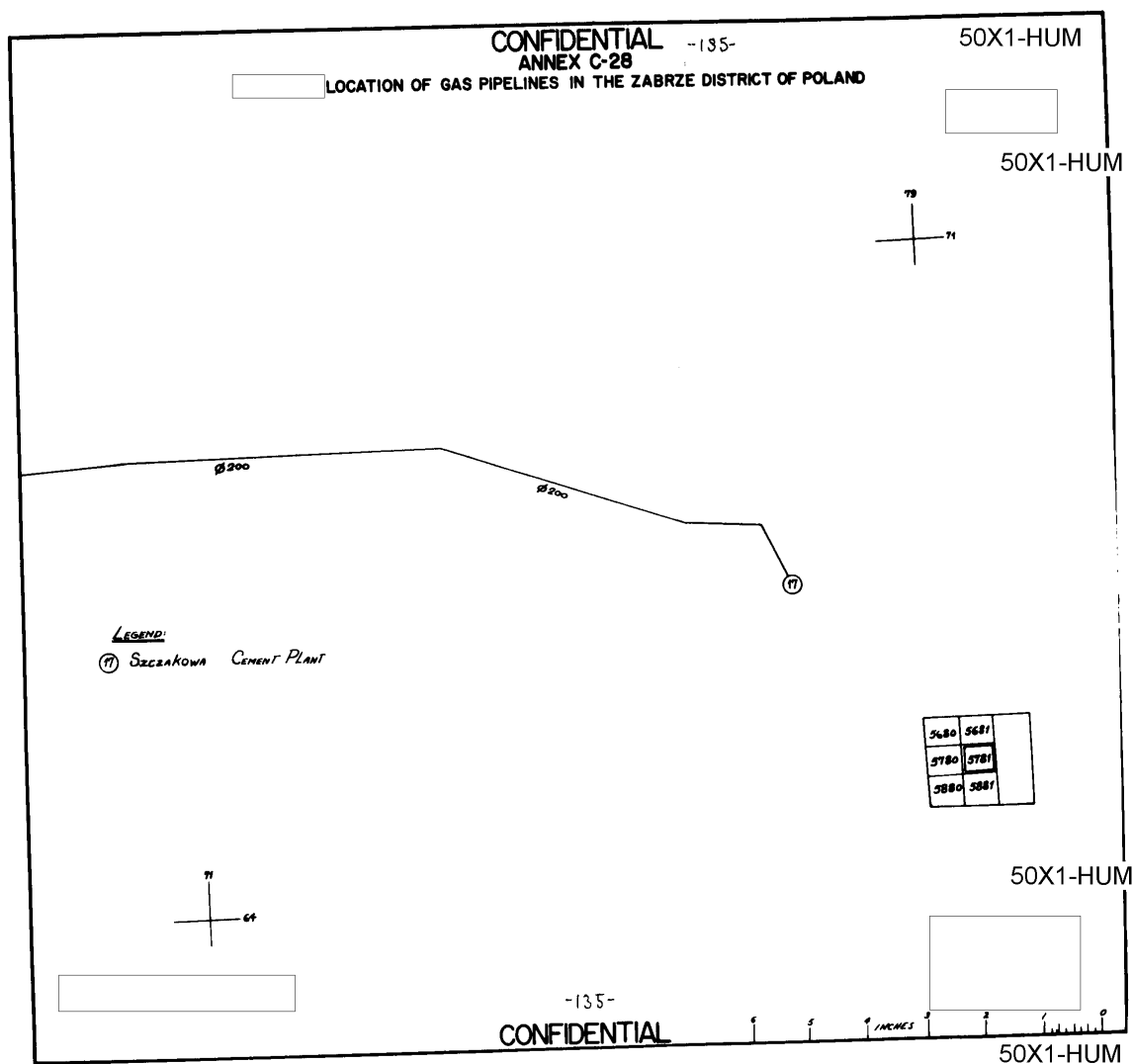
134

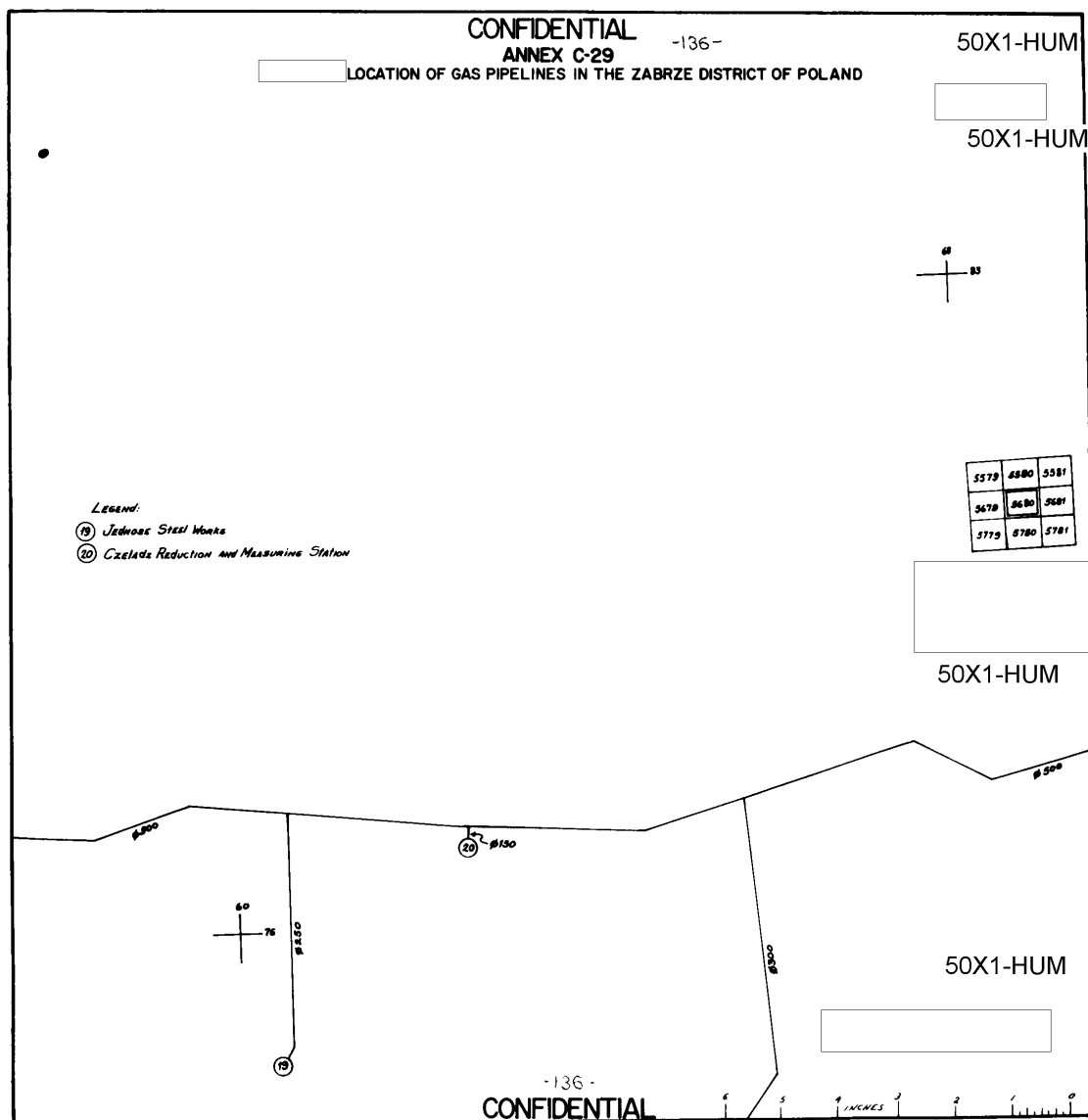
Legend to Annex C-27

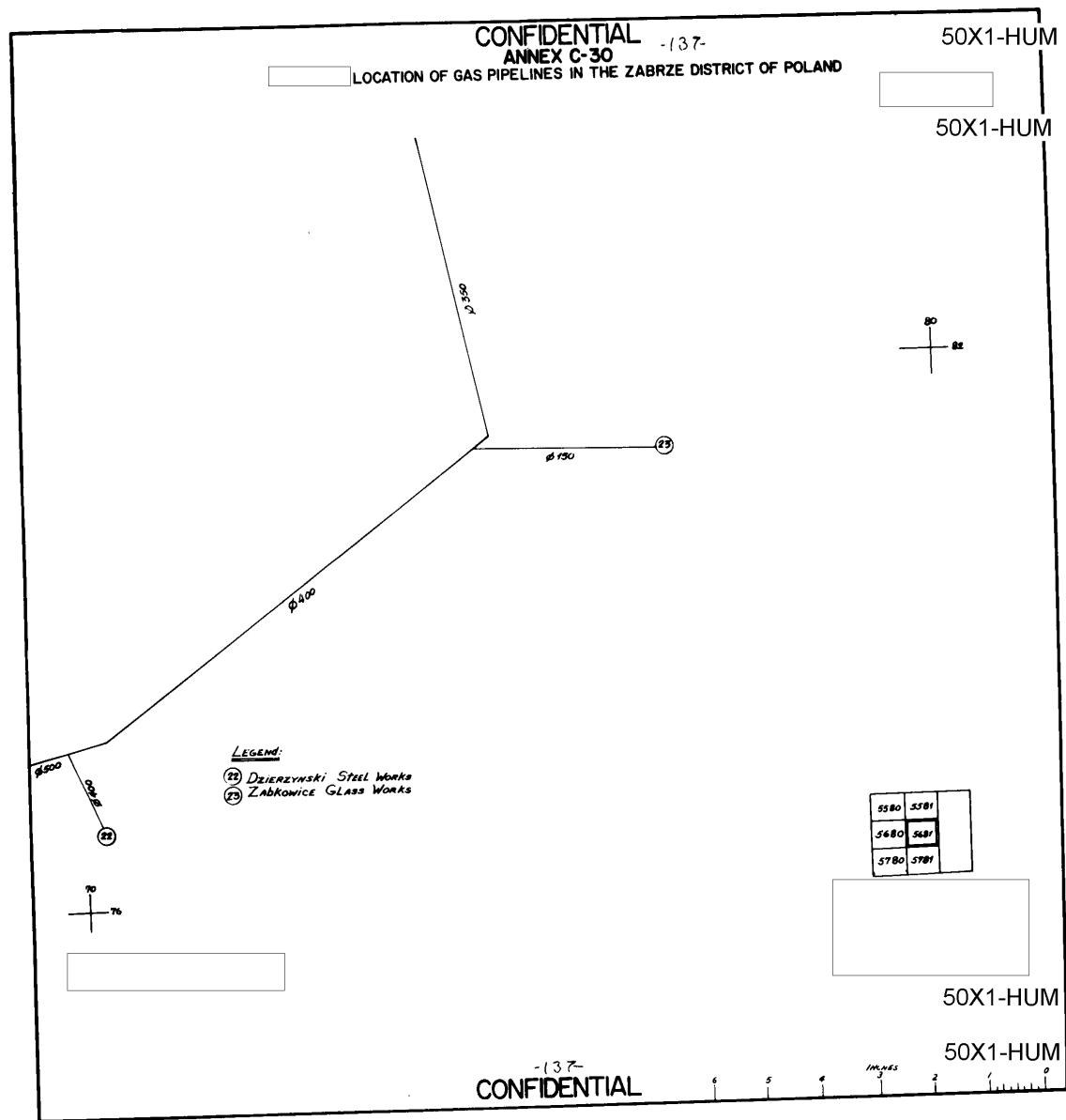
Annex C-27 shows all installations subordinate to the Szopienice Compressor and Distributing Station.

1. Entrance building. It was a 1-story, wooden building, measuring 5 x 5 x $3\frac{1}{2}$ m.
2. Water-cooling tower. It was 15 m high and 6 m in diameter.
3. Compressor station. It was a 2-story, stuccoed building, measuring 30 x 15 x 10 m. The basement contained a pumping station, that pumped water through the compressors to cool them. The building contained two German high-pressure, turbine-type KSB compressors. Each compressor was designed to operate under 4 atmospheres of working pressure, actually operated under 4 atmospheres of pressure, was powered by a Polish 6000 V, 220 kw, M-5 electric motor, and each compressor had a 5000 cu m per hour capacity. Both these compressors were constructed in 1939 and were in bad condition. The building also contained two transformers that reduced 6000 V to 220/380 V.
4. Gas holder. It was a 100,000 cu m MAN, dry-type gas holder. It was constructed in 1957 and was in good condition.
5. Three metal containers. They were round in shape and were 8 m in diameter and $2\frac{1}{2}$ m high. They were used to store oil and grease.
6. Boiler works. It was a 1-story, stuccoed building, measuring 30 x 14 x 5 m.
7. Living quarters for workers. It was a 1-story, wooden building, measuring 25 x 10 x $3\frac{1}{2}$ m.
8. Wire-mesh fence. It was $2\frac{1}{2}$ m high and had three strands of barbed wire on top. It completely fenced in the Szopienice Compressor and Distributing Station, that was about 500 m wide across the front and about 350 m long.

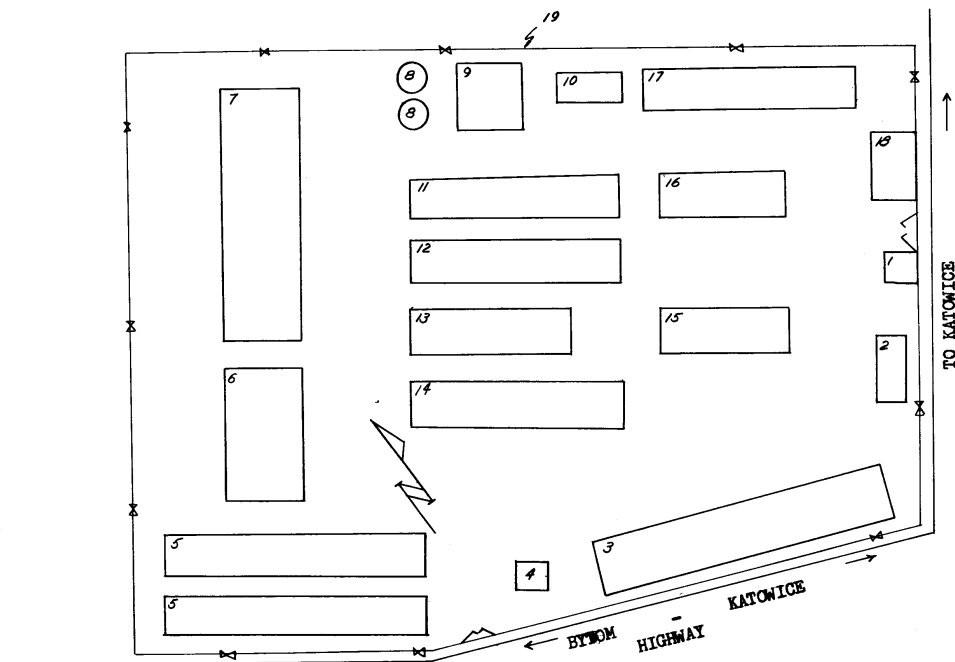
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SKETCH OF THE JEDNCSC STEEL WORKS IN POLAND



Symbols:

- Entrance
- Wall

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138

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139

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Legend to Annex C-31

Jednose Steel Works in SIEMIANOWICACH.

1. Entrance building. It was a 1-story, red brick building, measuring 5 x 5 x 3½ m. There were two armed civilian guards, dressed in special uniforms, on duty here, who checked the passes of all persons coming in and going out of the Jednose Steel Works.
2. Fire station. It was a 1-story, red brick building, measuring 25 x 10 x 4½ m. It contained four fire trucks.
3. New tube-rolling mill. It was a 1-story, red brick building, measuring 120 x 40 x 16 m.
4. Reducing and measuring station. This was a 1-story, red brick building, measuring 7½ x 5 x 5 m, where the gas from ZGOZ was measured and its pressure reduced.
5. Two mechanical workshops. These were two, 1-story, red brick buildings, measuring 110 x 30 x 15 m, where steel parts were produced. The Germans used the buildings to produce antitank guns, antiaircraft guns, and tank guns, but the manufacturing equipment was removed from them in 1945 by the Soviets. [redacted] no one was allowed in these buildings but the people who worked in them. 50X1-HUM
6. Rolling mill. It was a 1-story, red brick building, measuring 60 x 30 x 15 m, where long sheets of steel were produced, which were used in the production of pipes manufactured by the steel works.
7. Martin Open-Hearth Plant. It was a 1-story, red brick building, measuring 160 x 40 x 20 m. It contained about 8 Martin open-hearth furnaces.
8. Two water-cooling towers. They were 30 m in diameter and 40 m high.
9. Boiler works. It was a 2-story, red brick building, measuring 40 x 35 x 20 m.
10. Electrical distribution building. It was a 1-story, red brick building, measuring 30 x 10 x 8 m. The transformers in the building reduced 30,000 V to 6000 V and 6000 V to 220/380 V.
11. Rolling mill. It was a 1-story, red brick building, measuring 80 x 30 x 14 m, where steel rods and wire were produced.
12. Pipe manufacturing plant. It was a 1-story, red brick building, measuring 80 x 30 x 14 m. The plant used the long sheets of steel from the rolling mill to produce water, steam, and gas pipes up to 100 m in diameter.
13. Zinc coating plant. It was a 1-story, red brick building, measuring 60 x 30 x 20 m. Water pipes were coated with zinc here.
14. Old tube-rolling mill. It was a 1-story, red brick building, measuring 80 x 30 x 16 m. It produced water, gas, steam, and oil pipes by the Mannesmann process.
15. Parts warehouse. It was a 1-story, red brick building, measuring 60 x 30 x 12 m.
16. Warehouse. It was a 1-story, red brick building, measuring 60 x 30 x 12 m, for finished products.
17. Mechanical workshop. It was a 1-story, red brick building, measuring 100 x 20 x 15 m.

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140



Legend to Annex C-31 (Cont'd)

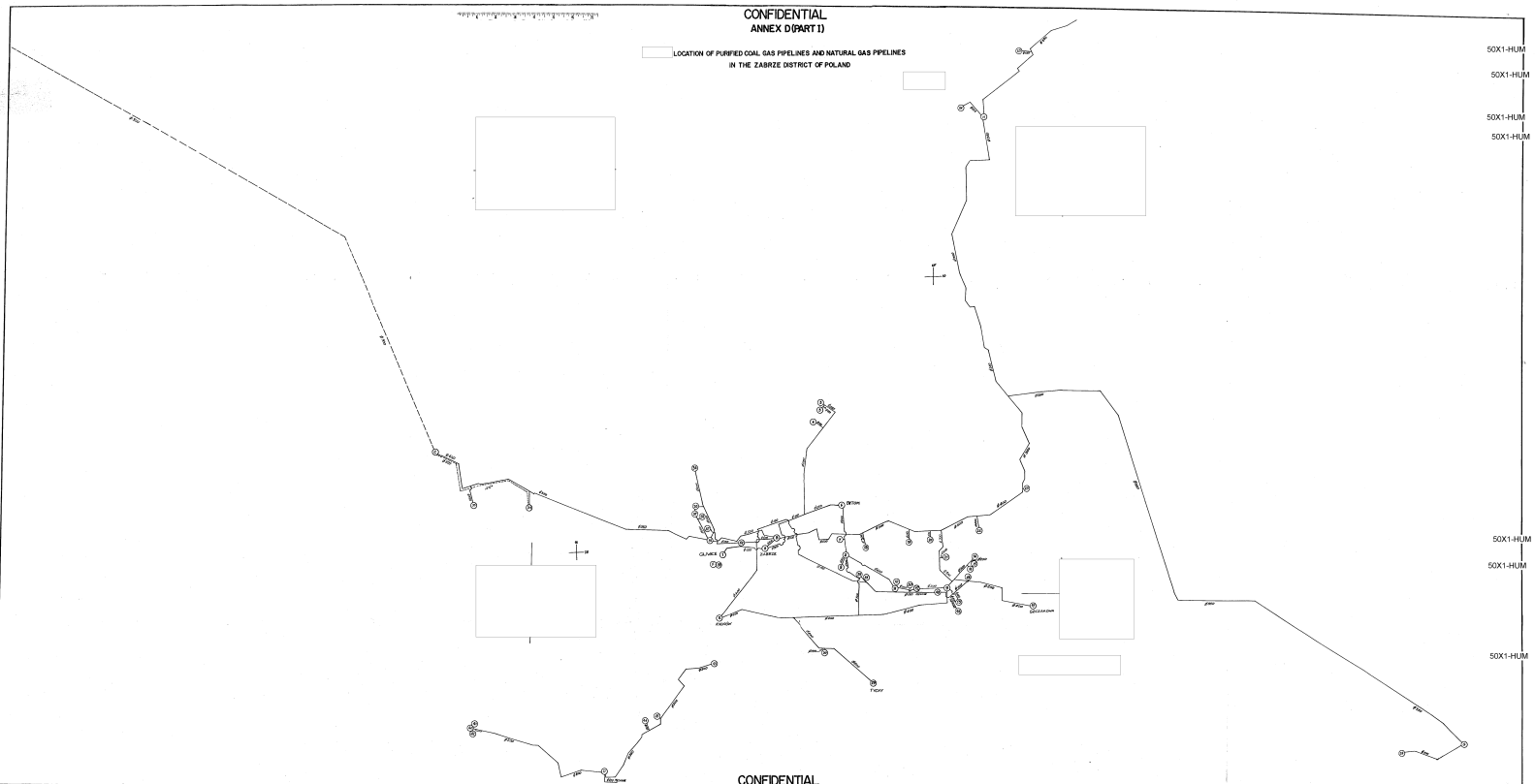
18. Administrative building. It was a 3-story, red brick building, measuring 30 x 14 x 14 m. It contained the administrative branches of the steel works.

19. Red brick wall. It was 2½ m high and had three strands of barbed wire on top. It completely fenced in the Jednostka Steel Works, which was about 1200 m wide across the front and about 1000 m long.

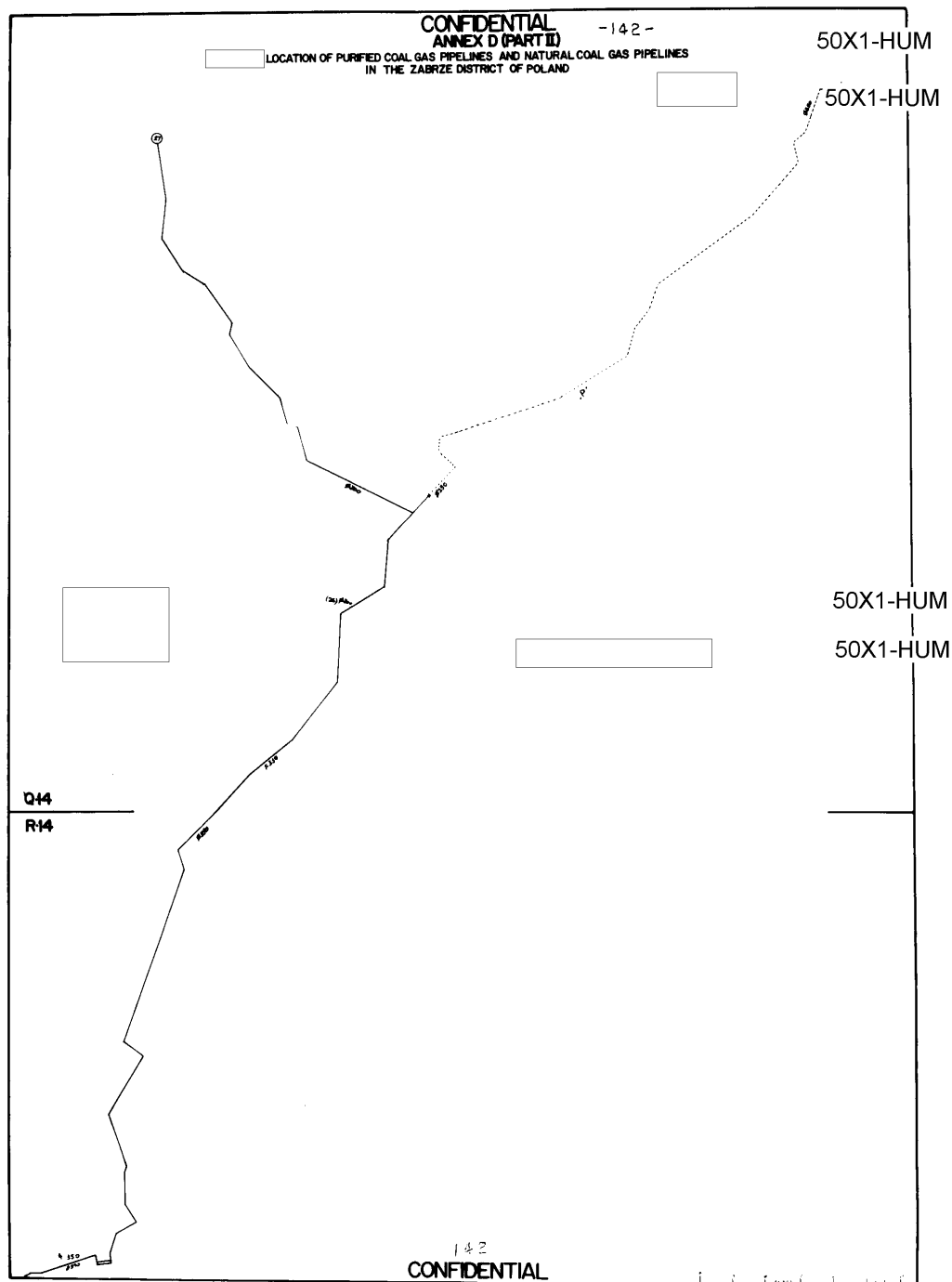
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ANNEX D(PART I)

LOCATION OF PURIFIED COAL GAS PIPELINES AND NATURAL GAS PIPELINES
IN THE ZABRZE DISTRICT OF POLAND



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143

Legend to Annex D (Parts 1 and 2)

- A. Zabrze I Compressor and Purifying Station
- B. Zabrze II Compressor and Purifying Station
- C. Zdzeszowice Compressor and Purifying Station
- D. Radlin Compressor and Purifying Station
- E. Knurów Compressor and Purifying Station
- F. Carbochemia Compressor and Purifying Station
- G. Krakow Compressor and Purifying Station
- H. Czestochowa Compressor and Purifying Station
- 1. Gliwice Distributing Station
- 2. Swietochlowice Distributing Station
- 3. Tarnowskie Gory Activated Carbon Black Factory
- 4. Tarnowskie Gory City Gasworks
- 5. Tarnowskie Gory Chemical Factory
- 6. Bytom Distributing Station
- 7. Zygmunt Steel Works
- 8. Florian Steel Works
- 9. Szopienice Compressor and Distributing Station
- 10. Baildon Steel Works
- 11. Katowice Distributing Station
- 12. Ferron Steel Works
- 13. Myslowice City Gasworks
- 14. Katarzyna Steel Works
- 15. Cedler Steel Works
- 16. Diechel Steel Works
- 17. Szczakowa Cement Plant
- 18. Kosciuszko Compressor Station
- 19. Jednos~~e~~ Steel Works
- 20. Czeladz Reduction and Measuring Station

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144

Legend to Annex D, Parts 1 and 2 (Cont'd)

21. Milowice Steel Works
22. Dzierzynski Steel Works
23. Zabkowice Glass Works
24. Czestochowa Reduction and Measuring Station
25. Rudniki Chemical Factory
26. Piotrkow City Gasworks
27. Lodz Area Gasworks
28. Krakow Area Gasworks
29. Tychy Reduction and Measuring Station
30. Mikolow Reduction and Measuring Station
31. Batory Steel Works
32. Piotrowice Raw and Purified Coal Gas Distributing Junction
33. Kedzierzyn City Gasworks
34. Azoty Chemical Factory
35. Labendy Steel Works
36. Ryskowice Reduction and Measuring Station
37. Herminia Steel Works
38. Labendy City Gasworks
39. Carbochemia Activated Carbon Black Plant
40. Raciborz City Gasworks
41. Plania Carbon Electrode Factory
42. FUT Boiler Factory
43. Debiensko Compressor Station
44. Rybnik City Gasworks
45. Silesia Steel Works
46. Myslowice Measuring Station
47. Gliwice Gas Filling Station
48. Sosnowiec Gas Filling Station

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145




Legend to Annex D, Parts 1 and 2 (Cont'd)

- 49. Szopienice Gas Filling Station
- 50. Katowice Gas Filling Station
- 51. Hajduki Batory Gas Filling Station
- 52. Zabrze-Maciejow Gas Filling Station

Symbols:

P Planned

UC Under Construction

 One pipeline crossing another pipeline

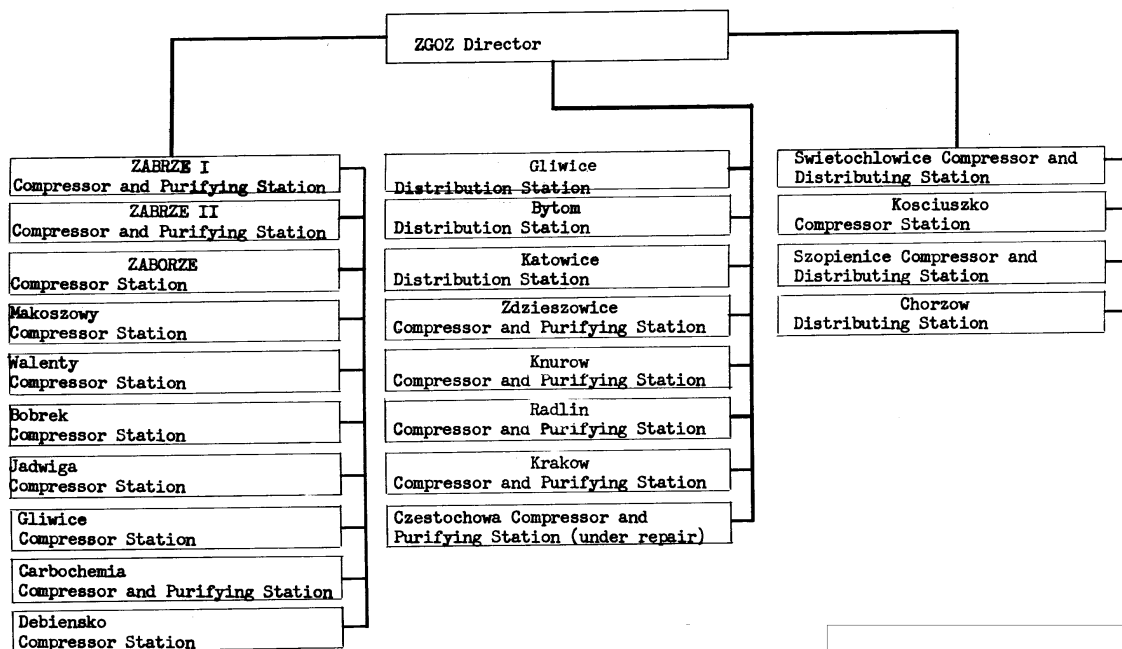
Compressor and Purifying Stations are lettered so as to show where they are located in relation to purified coal gas consumers.

 Internal diameter of pipeline in mm.

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ORGANIZATIONAL CHART OF AGENCIES SUBORDINATE TO THE ZABRZE DISTRICT GASWORKS IN ZABRZE, POLAND

50X1-HUM



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146

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